THE BUILDER

A RECORD OF ARCHITECTURE AND CONSTRUCTION.

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SOLIDS AND VOIDS.

THE primary and most important element in architectural design is the proper relation and disposition of solids and voids, and everything else is, comparatively speaking, subordinate and unimportant, for no mouldings and detail can suffice to please us, and no sculpture can save the appearance of a building in which the relation of solid wall to window and door openings is unpleasing and inharmonious to our senses. In the gradual evolution of architectural form the tendency has been to increase the ratio of voids to solids as the necessity of protection from attack and from external heat and cold became lessening factors. The invention and use of glass gave the builder additional freedom from restrictions hitherto affecting design, while the increase of sedentary occupation with the growth of civilisation made additional window space necessary. If we except our mediæval churches, in which windows were primarily used for the decorative opportunities which they afforded for the display of coloured glass and tracery, we may say that the date of a building might be roughly ascertained by the ratio of solids to voids. But sound generalisations on such subjects are difficult to make, for a number of other elements affect the question, such as climate and style. We can say at once that openings in a southern climate are smaller in size than those in the north, because the light is more intense, and there are in addition the requirements of different styles, each of which demands a ratio of its own. But even within the limits of the same general style wide variations are possible. For example, the palaces of the Florentine Renaissance are buildings in which solids preponderate greatly over voids, while in the Venetian Renaissance a different ratio holds good, and it may be said the effect of each is equally satisfactory to the eye. It is doubtful if the possibilities of the Venetian Renaissance as a foundation from which to develop a type of architecture suited to the business quarters in our great cities have been sufficiently considered, for the front of a typical Venetian palace, like that of a fifteenth-century church, may be described as a screen of stonework filled in with glass.

The greatest difficulty in modern design arises from the fact that, while detail based on that of a past age may be perfectly applicable to modern buildings, the ratio of solids to voids, on which all depends, must be radically altered. The mullioned window is very adaptable, for, like an agglomeration of cells, it may be built up to fill varying spaces with satisfactory effect so long as the proportion of the units of which it is composed are pleasing. The Gothic church window, within fairly wide limits, may be made shorter or longer as desired, and give an equally good effect. But in the case of a Classic or Renaissance window or door opening the limits of width and height within which it can be varied and please the eye are very small, and the spacing of openings becomes a problem requiring nice adjustment. It is almost impossible to lay down rules for this proper spacing, for, with the exception of the cardinal axiom that voids should be vertically over or under one another, every canon is broken with good effect in some exceptional case or other. Thus the general rule that the outer angles of a building should be marked by a greater width of solid wall than the intermediate divisions between openings is negatived by the satisfactory effect of certain Renaissance examples where the reverse obtains, while pleasing effects may result from increasing or decreasing widths and heights of openings in the successive stories of a building. The arched opening framing the windows of successive tiers of floors or framing one large window with a smaller mezzanine window over has its use and value in Renaissance design, for by using it in the right manner an appearance of sameness can often be eliminated, and such methods may be described as a poetical setting of utilitarian facts. Again, a succession of similar openings divided by narrow intervals is unpleasant, but, if window space is required, harmony can frequently be obtained by still further reducing the intervals till we have the effect of an open space divided up by pilasters or columns, and if the necessary voids are many it will probably be right to consider the wall as a screen set in an enclosing frame.

It is well in designing to ascertain by darkening in the voids in an elevation whether a pleasing effect is obtainable, because if it is not further elaboration is useless. The inexperienced architect often fails to realise this, the unimaginative designer wonders why his work fails in effect, while the man immersed in practical considerations cannot understand that the height of the head or sill of a window cannot be governed by practical considerations only. The reason is not far to seek, for on the rhythmic relation of solids and voids depends the whole poetry of composition, and it is in the recognition of this fact that the superiority of Renaissance architecture over that of mediæval times is more evident than in any other particular. The mullioned window may be likened to a lower and cruder form of life, which may be stretched one way or another to occupy a desired space, while the window or door opening in Classic or Renaissance buildings is like the higher organisms of life—perfect if properly proportioned, misshapen and grotesque if those proportions are missed.

The reason why our domestic architecture is more satisfactory in its general character than any other branch of modern design is that in it the solution of the problem of solids and voids is usually an easy one, the small amount of height to be dealt with and the frequent adoption of some type of design on which mullioned windows may suitably be employed eliminating difficulties which are felt at once by the architect of public and commercial buildings. Even so it will be found on critical examination that our best modern houses owe most of their effect to the same cause—the due relation of solids to voids; and this is especially noticeable when the design in question is one of a marked traditional type, for we notice at once that an increase of the ratio given to window space makes it impossible to get the effect required. We find that while the mullioned windows afford us a latitude known with no other, and we can extend it lengthwise, a little additional height which may be required for purposes of lighting and ventilation is impossible if harmonious effect is aimed at. We can if we will increase the height of our windows, but must do so by an additional tier of lights above a transom, for to increase the height of a single tier of lights will spoil the effect of the design. And, having adopted a double tier system below, it is frequently found that single tiers of lights for a bedroom floor fail in effect. With other types of design it will be found that both heights and widths of windows have to be most carefully considered and exactly proportioned.

Our schools of architecture should instil into the student's mind the truth that solids and voids should be as exquisitely proportioned as the details of the Orders, for the success of architectural design will almost entirely depend on this factor, while we have open to us an infinite variety of combinations never dreamt of in earlier ages.

The problem of the shop front, with its superimposed burden, will give full scope for the ingenuity of the modern designer, who will be most successful if he has studied what the genius of Renaissance architects evolved as a new departure in æsthetics, for in the Gothic period we may say that successful results were obtained by chance, while afterwards they were the outcome of thought and consideration, and are to-day the crux and supreme test of the designer's skill to an extent unknown before in arranging the adequate lighting of schools, warehouses, scientific institutions, and commercial premises.

C

NOTES.

Limited Competitions.

WE are glad that the special meeting of the Royal Institute of British Architects held last week to consider the advisability of extending the R.I.B.A. Regulations as to competitions to cover limited competitions was able to come to no decision because a quorum was not obtained, for it is a question which should only be decided by a clear majority of votes obtained at a full ordinary meeting. When the subject comes up again we believe it will be found that there are many reasons why the R.I.B.A. should hesitate to take so far-reaching a decision. We are in hearty agreement with the regulations which make it impossible for members of the Institute to take part in open competitions without the appointment of an assessor, but we hold that, as in the majority of cases those invited to take part in a limited competition can and do secure the appointment of an assessor for that competition, and in a minority of cases in which this may not be possible or advisable members of the Institute should be left to act as they think wise and fitting. We have known education and other committees the members of which have an excellent knowledge of their own requirements based on years of practical work, and having this knowledge we think they may be justified in believing they can come to a sound conclusion without professional advice. A competitor invited to take part in such a competition may give dire offence to those whom he knows by refusing to accept their decision, and we do not believe it a wise thing to do to force men into a position in which their interests conflict with professional rules. The case for the professional assessor rests on the conviction of the inability of laymen to decide wisely, and where this conviction does not exist in the minds of those invited they should be free to act as they consider best. Neither do we agree with the belief which many hold that public bodies are generally swayed by favouritism, as we have been convinced by experience that in a majority of cases they are most anxious to act fairly and justly for those whom they represent. Public bodies become a little restive if they are advised too often as to the way they should conduct their own business, and possible points of friction should be eliminated and not increased in number. To act otherwise is to increase the number of cases in which authorities will be inclined to say, "A plague on both your houses," and appoint a salaried professional man to do the whole of their work. Architects have no redress if they take this course, and it is wise not to give them additional inducements to do so. The greatest happiness and prosperity of the greatest number of architects should be the aim and object sought by concerted professional action.

War Relief for Intellectual Workers.

EXPERIENCE proves that the war has not resulted in that paralysis of trade which was originally anticipated, or in that distress among the manual workers of the country the fear of which led, we suppose, to the formation of the Prince of Wales' Fund. Experience rather tends to show that the war has paralysed certain branches of intellectual efforts, that such distress as now exists is to be found among the intellectual workers, and that in some quarters it is becoming more acute as the war drags on. Considering that the Prince of Wales' Fund was created for the relief of civil distress caused by the war, it might naturally be expected that it would be immediately available where most needed, and that the bulk of this very large sum of money would be devoted to the relief of the intellectual workers, even though everyone originally anticipated that it would be needed for the manual workers. We all seem to be agreed that what are generally called the professional classes have suffered the most, but unless we are entirely misinformed, everyone is not equally agreed that a sufficient proportion of the fund has hitherto been available for their relief. If those in control of this Fund are thought to have shown any hesitancy in its distribution or to have felt any doubt as to its proper allocation, it must be remembered that they, like the rest of us, have had to adjust their ideas to an entirely new situation. Widespread distress is usually associated with the poorest and most ignorant class. Its relief has been a simple matter of small pecuniary assistance to those affected. There is precedent to follow, both as to the nature and the amount of the relief and the machinery by which it should be distributed. But when we are faced with the unusual spectacle of considerable distress among a highly educated and particularly sensitive class the same precedent does not exist. A momentary hesitation about the eligibility and urgency of this unusual claim on the Fund is pardonable, and considerable doubt as to the best method of affording relief is only to be expected. But there is now no further room for doubt respecting the justice of the claim, and the benevolent societies representing the various professions have already acquired some experience as to the nature and amount of the relief required and the manner in which it should be offered. It seems quite clear that the small sum per week which would suffice to keep a docker's family from starvation is not sufficient to keep a professional man from sinking into a position in which his technical knowledge and skill are no longer of use to the community. This is the danger to be avoided, not so much in the interests of the individual as out of concern for the State, which will need every one of its intellectual workers in the reconstruction which must follow the present upheaval. The question appears to be one with which the Professional Classes War Relief Council is particularly concerned. This Council might possibly see some advantage in bringing this point of view to the attention of those responsible for the administration of the Fund.

Colonial Architecture.

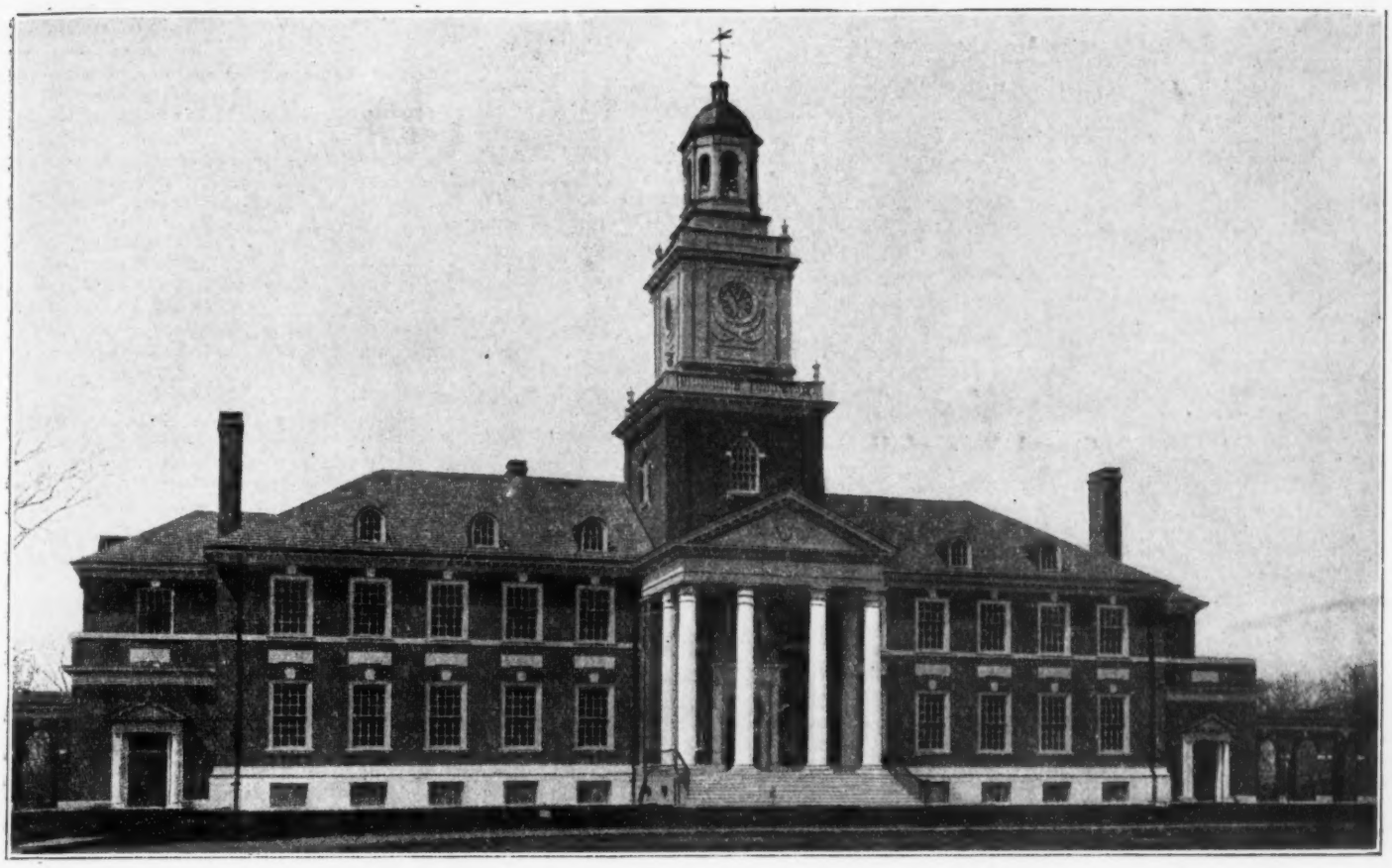
WE hope that one by-product of the war may be the consideration of the architecture of the British Empire as a whole, for we think that, with the exception of the best buildings in Canada, where the influence of the United States is strong, the general level of the architecture of our colonies and tropical possessions is with some exceptions a low one. In Australia and New Zealand the general standard aimed at in a large house still seems to be that which would have passed current in the mid-Victorian period here, though neither specially suitable for the climate nor needs of the country. Despite the intense heat and strong light which are normal conditions in Australia, houses are still over-windowed, and, despite the fact that land is plentiful and cheap, the capabilities of one-storied houses do not seem to have been realised. The effect of one man's work if that work is inspired by genius can be seen in some of the recent buildings in the Transvaal and Cape, but so far neither Australia nor New Zealand has produced architects of sufficient individuality to give a new lead, and the depression produced by dull commonplace still reigns in contemporary work. In our tropical possessions difficulties are accentuated by the fact that Europeans do not settle, but only take up their residence in hot climates for a term of years, and we have first to eliminate the impression that it is wise to put up with the constant aspect of hideousness even for the term of a man's working life. Because the life of a building is comparatively short, we see no reason why it should not be equally well designed as a monument which will go down to posterity, though the conditions which govern good design, and especially sound construction, will be of a very different character in the two cases. India is still under the shadow of the Government engineer, who, excellent as he is in his own province, can hardly be said to have a sympathetic appreciation of architectural form, and who has not the proficiency in planning which is conducive to economy. It is to be hoped that the note set by Messrs. Lutyens and Baker at the new Delhi, and the work of some of the recently-appointed architects in the service of the Government of India, will institute a new departure which is much needed in the interests of architecture, but the danger is, as we have pointed out, that the Government will, in its system of departmentalising, appoint too few heads and too many subordinates, for it cannot be denied that no man, however gifted, can expect to be able to cope with entire success with the immense amount of designing which falls to the architects of the various Indian provinces.

National Waste.

The questions of economy, waste, and thrift are at present in everyone's thoughts, and it is likely that we shall after the war be especially anxious to see where we can get equal results with less expenditure. Many of the suggestions made in the daily papers show the want of imagination of a miser rather than the spirit of the economist. The one requires parsimony, the other imagination and invention. We waste money in our methods of providing heat for domestic purposes, and coal is one of the items which bulk unnecessarily largely in the housekeeper's expenses. We think that more and more people will be inclined to use inventions which have for their object the full utilisation of all heat produced, whether directly, from coal, or indirectly by means of gas and electricity, and those firms who have turned their attention to the subject will find they have anticipated the direction of popular wants. The more the open fire becomes an optional means of heating, the freer we shall be from a constant drain on our purses and the more the housewife will be saved in labour and cleaning. Prejudices die hard, but they do die in the long run, and the house of the future will probably be heated by an ingenious system of gas or hot water or electricity rather than by the open fire. The terrors of going to bed and getting up in the winter are due to our failure to adopt methods by which our houses can be evenly heated, and at present winter in an English house is more to be dreaded than winter in climates more rigorous.

"Set the Example."

THE *Times* in a recent issue, under the heading we quote, advises public bodies to postpone building work in the interests of economy, because building "is excessively costly and labour is scarce now," and then goes on to add that when "the time comes to find work again for an overstocked labour market building will be one of the great fields for employment." It suggests in conclusion that some kind of control may be necessary if public departments are to economise. We think that advice of this kind is both mischievous and untrue. In the first place, most experts agree that building is *likely to be more costly after the war than it is now*, and it therefore follows that those who build necessary buildings at the present time are economising. Secondly, a large proportion of those employed in the building trades are men who are above the age limit for enlistment, and it is absurd to suppose that they could all be employed in munition works with advantage to the community. The war has produced a considerable stoppage of building which will have to be made good afterwards, and the more work is held back the more the public will have to pay, when they do build, in the shape of increased wages. To advocate the stoppage of building works is similar to approving the action of a speculator in the wheat market who produces an artificial scarcity by refusing to sell in order to inflate prices to the public detriment. By all means let people be reasonably economical, but let us avoid panic, and remember that consistently with doing our duty the more we can secure usual conditions the better it will be for the whole of the economic interests of the country.



The Academic Building, Johns Hopkins University, Homewood, Baltimore.

Messrs. Parker, Thomas, & Rice, Architects.

(From the *Architectural Record*, New York.)

THE JOHNS HOPKINS UNIVERSITY, HOMEWOOD, BALTIMORE.

THE new buildings of the University are about two miles from the old ones, and surrounded by a good residential district. The site is 150 acres in extent, and on it stood Homewood, a characteristic house of the Georgian period, the style which has been maintained in the design of the new University group of buildings. The proportions and decorations of Homewood were preserved as far as possible in the design of the new University group, with the exception that the ratio of window space to wall has been increased, bearing in the new buildings the relation of 1 to 6 as compared with the floor areas. The main building of the new group, Gilman Hall, is modelled on the portico of the old house. A competition was instituted in 1904, limited to five well-known firms of architects, with the result that the plan of development of Messrs. Thompson & Parker, of Baltimore (now Messrs. Parker, Thomas, & Rice), was selected. The constituent parts of the University are :—(1) The academic building termed Gilman Hall, (2) chemical laboratory, (3) geological laboratory, (4) biological laboratory, (5) physical laboratory, (6) heat, light, and power plant, (7 and 8) dormitories and dining hall, (9) mechanical and electrical engineering building, (10) civil and mining engineering building, (11) gymnasium, (12) students' hall, (13) classrooms building, (14) Memorial building and chapel, (15) President's house, (16) Faculty Club, (17) assembly hall, (18) administration building, and (19) astronomical observatory. The general view given shows the arrangement adopted, the main quadrangle being approached under an arched gateway in the administration building, Gilman Hall being at the farther end of the quadrangle, in which the library and other non-scientific departments will be housed. Four laboratory buildings, those allotted to physics and geology and chemistry and botany, complete this main quadrangle, all these buildings being connected by tunnels and arcades giving communication between them in all weathers. Between the laboratory buildings on either side are marble stairs, affording access to other quadrangles. At a lower level round the southern quadrangle are grouped the engineering buildings, while round the smaller northern quadrangle are arranged the undergraduate buildings, the vista being closed by the students' hall.

Behind Gilman Hall are placed the botanical laboratories and garden, while the heat, power, and light plant of the whole group is placed in rear of the mechanical engineering building. The athletic field is in the extreme northern corner, and the gymnasium near the south. The dormitories are to be built between the athletic field and main group, fronting and parallel to Charles-street, which forms the most convenient exit, and they will form a connecting-link between the buildings planned for work and recreation. Messrs. Parker, Thomas, & Rice designed the general plan and also Gilman Hall, the light and power house and the administration building; the chemical laboratory is being designed by Messrs. Carrère & Hastings; the physical laboratory by Messrs. Wyatt & Nolting, of Baltimore; the geological group by Messrs. Walter Cook & Winthrop A. Welch, of New York; and the engineering buildings by Mr. J. E. Sperry, of Baltimore. Through the courtesy of the *Architectural Record* of New York; we are enabled to give illustrations which show the character and detail of this fine scheme, which is impressive and characteristic in its simplicity and dignity, and shows the influence of old Colonial tradition on modern American design.

ARTERIAL ROADS IN LONDON.

THE South-Western Sectional Conference was held at the Local Government Board on June 29, the Right Hon. Viscount Doneraile in the chair. The Report of the Sub-Committee was received and discussed. The various proposals made in connection with the bridges and also in connection with the Kingston by-pass, the extension of Brentford by-pass to the Basingstoke-road, and the Chertsey-road were dealt with in detail; and the following roads were recommended, though the actual routes were left for subsequent discussion :—Cromwell-road extension, Merton and Surbiton extension with Kingston by-pass, Colnbrook by-pass, Fulham-road to King's-road connection, Wandsworth Bridge and Trinity-road, King's-road to Embankment, extension of Brentford by-pass to Shepperton, Chertsey to Barnet (southern section), outer East and West-road and connections.

The route of the Brentford by-pass was revised, and now passes north of Hounslow and continues from Springwell-road to join the Basingstoke-road by Baber Bridge, so as to give access to the group of roads leading south through Feltham to the river bridges.

Beyond Baber Bridge the roads to Shepperton, Chertsey, and Walton need considerable improvement, and, as Shepperton is closely built, a new and more direct road to the nortd with a short causeway across low-lying lanh is recommended.

On the question of the proposed inner and outer by-passes at Kingston, there was so much diversity of opinion that the recommendations of the Report were referred back for reconsideration by the Sub-Committee after consultation with the local authorities.

Putney Bridge, which was rebuilt as recently as 1886, has a roadway of only 25 ft. and is altogether inadequate for the traffic of to-day. It is proposed to widen the bridge from 44 ft. to 74 ft. (on the down-stream side), which would allow 51 ft. for roadway, or enough for two lines of traffic on each of the proposed double lines of trams.

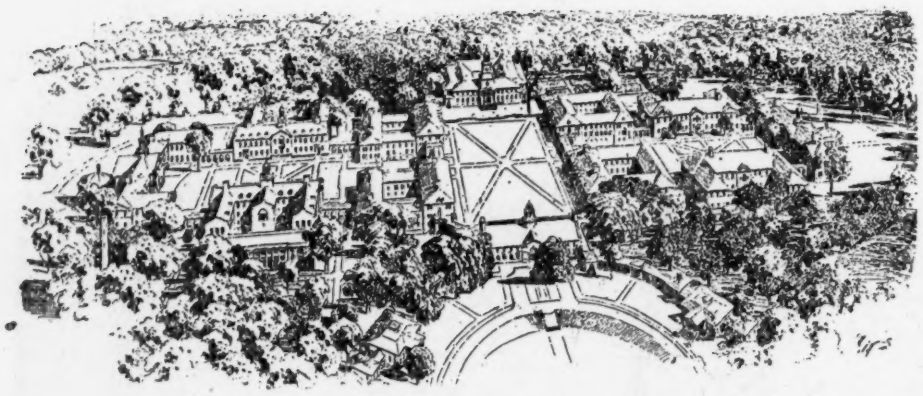
Wandsworth Bridge is to be rebuilt with improved approaches—on the north by widening Wandsworth Bridge-road, and continuing across King's-road to the Fulham-road, and on the south by cutting through from York-road to the end of Trinity-road.

It was also recommended that Chelsea Bridge should be reconstructed to fit it for heavy traffic. If the recommendations were carried out there would be five bridges between Putney and Vauxhall available for heavy traffic, each practically a mile apart.

The Fulham Council urges the use of ferro-concrete for these bridges on grounds of economy.

The route of the Chertsey-road has been revised, and now, owing to new filter beds, follows the old filter beds, and through Sunbury to Hanworth. It then follows the original route up to Chase Bridge, and then goes down to the avenue. At Richmond it crosses the river by a new bridge close to present railway bridge, skirts the Old Deer Park, on by the Lower Mortlake and Lower Richmond roads to Chiswick-lane.

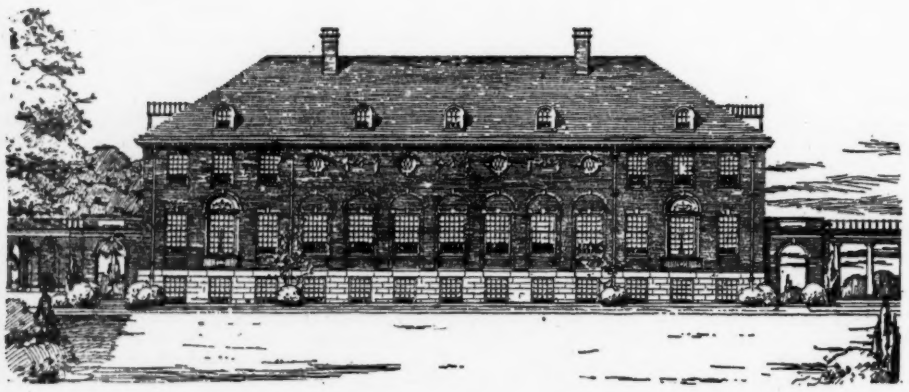
The recommendation in favour of a southern by-pass to connect Cromwell-road with the Brentford by-pass, which would involve two new bridges across the river, and would traverse Castelnau, was strongly opposed by the Barnes Urban District Council. Finally, the conference accepted the recommendation, omitting the word "southern," which left the



General View of University.

View from Hopkins Oval.

Interior of Main Court, looking toward Academic Building.



Physical Laboratory.

Messrs. Wyatt & Nolting, Architects.

Chemical Laboratory.

Messrs. Carrère & Hastings, Architects.

The Johns Hopkins University, Homewood, Baltimore. (*See page* 45.)

(From the *Architectural Record*, New York.)

exact course of the by-pass open for reconsideration.

The other resolutions accepted by other conferences as to reappointment of Sub-Committee, and the power to appoint a Special Committee, and as to procedure were adopted.

One delegate ventured to ask where the money for these vast improvements was coming from, and was informed that a mere application to the Road Board unsupported by any inducements such as private concessions or local contributions was not likely to be considered. Mr. Aldridge thought this question best deferred until the main conference, but was of the opinion that the Road Board, as at present constituted, had not enough funds to meet the needs of the case. He thought special Government grants would be required.

This and the previous reports we have given will show our readers the immense amount of detailed consideration which the new Road Board are giving to the subjects under discussion.

SARTORIO'S PAINTINGS OF THE CAMPAGNA.

WE have already noticed the work of Professor Aristide Sartorio, both in his magnificent frieze illustrating the rebirth of Italy, which is already in place around the Chamber of Deputies at Montecitorio, and in his paintings of the Campagna of Rome, which were exhibited at Venice last summer, and are now transferred to London, with additions to their number.

It is the object of the present notice to introduce the exhibition, which opened at the Galleries of the Fine Art Society on June 16, and will remain open all this month. One point which the visitor to these paintings of the Campagna can hardly fail to notice is the careful study and truth in realisation of animal life. This is an artistic tradition in his family, for his grandfather, Girolamo Sartorio, had been a well-known sculptor of animals; and the studies by Aristide Sartorio himself, many of which have been collected and reproduced in a recent volume—"Sartorio Pittore Animalista," just published by Celanza of Turin—are of marvellous force and truth of observation.

In these studies—besides the horse, of which he is a profound student, both in sculpture and painting, and himself an excellent horseman, and also the wild "fauna" of Africa, many of which he studied, as he himself has told me, in our London Zoological Gardens—there are careful drawings of sheep and sketches of buffaloes swimming, immersed to the neck, in the swamps; and we find here, too, in the present exhibition that horses, sheep, and buffaloes give a touch of life to his paintings of the Roman Campagna.

We see the buffaloes in one of his larger paintings here, dragging the great blocks of travertine from the quarries of Tivoli; or, again, in his "Winter in the Pine Forests," harnessed to the carts; or, in the illustration on page 47, surrounding the little postboy at Terracina, who seems quite undisturbed by their presence. These buffaloes—says Sig. Cervesaro—are last survivors of the herds that accompanied the barbaric tribes in their emigrations from the tablelands of Central Asia to the land of sunshine and blue skies; and, as a matter of fact, in traversing the Campagna from Rome to Subiaco, or yet again to Ostia, I have not come across them. They are to be found in the marshy district of the Maccarese, more especially between Rome and Civita Vecchia, where in the summer heats they lie immersed in the water.

"The melancholy of the coast," says the artist himself, "is immense. Without rocks, without promontories, without houses, naked in its solitude that is scarcely broken by the mediæval towers scattered here and there, the Tiber pours down the 'detritus,' which has blocked up the old harbours of Claudius and of Trajan, and the sea waves lap the coast slowly, idly, almost without sound. At Santa Marinella the rocks finish, and from Palo commences the wide, gleaming strand that, broken only by the mouth of the Tiber, advances as far as Anzio, and from Circeo reaches even to Terracina."

It is there, under Monte Nettuno, that the Via Appia, crossing the marshes, touches the sea. It has come from Rome herself as far as Casal Rotondo and the Alban hills; but, Albano once gained and Velletri passed, the Appian way, restored by the Popes resumes its old course, and continues as far as Terracina.

"The Postboy of Terracina."
By Aristide Sartorio. (*See page* 46.)
Exhibited at the Fine Art Society, 148, New Bond-Street, W.

"Little by little, as the road descends and we advance into the plain, an unnatural silence seems to impose itself over the scene. . . . The air becomes heavier; at rare intervals some ploughman or labourer looks astonished at a visitor. . . . Involuntarily an uneasy feeling comes over us. . . . The stagnant waters gleam on either side of the road. . . . The thought of fever comes unbidden to the traveller's mind."

A whole group of these paintings deal with Ostia, the antique city but recently uncovered, whose marble "Victory" Sartorio has depicted against the blue sky; another group of great interest with Terracina; another with the Tiber, its yellow waters wandering down towards the great cit[illegible]; another group with the pastoral life of the Campagna shepherds.

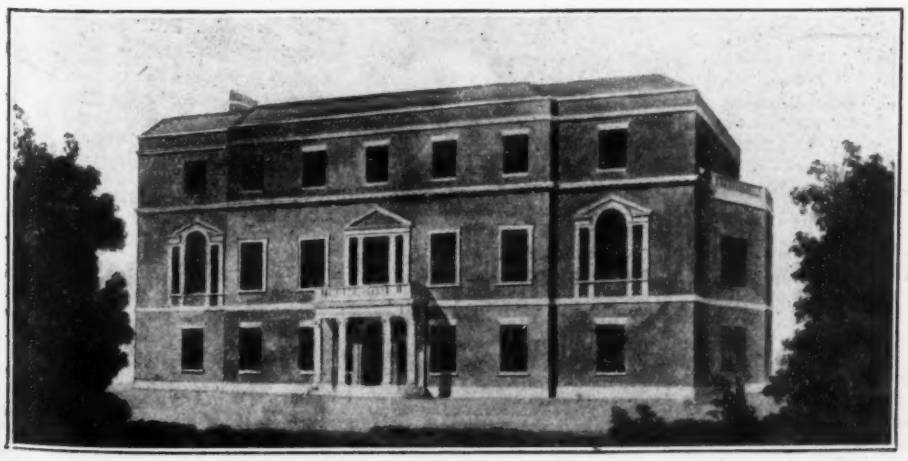
The artist himself has been throughout the winter a convinced supporter of the cause of the Allies, and has generously offered the profits of this exhibition to the fund for the families of British officers who may have come to need in the war. On the very day that his exhibition was opened the news came to London that, having volunteered in the Italian cavalry, he had been wounded and captured by the enemy.

S. B.

MRS. MONTAGUE'S HOUSE, PORTMAN-SQUARE.

IN 1760 "Athenian Stuart" designed the mansion at the north-west angle of Portman-square for the celebrated bluestocking, Mrs. Montague. The main elevation shows an interesting arrangement of single and three-light windows at the level of the first floor. Soane held high opinions of this building, and prepared the original drawing from which this illustration is reproduced to interest the students when he lectured at the Royal Academy. The drawing does not show the *porte-cochère* correctly, the latter being one of the first of its kind to be built in England. Stuart's treatment of a pediment over the three-light Palladian or Venetian window is quite original, and is distinct from the usual practice of the Adam Brothers or the Wyatts. It was Wyatt, however, who exploited the three-light window at every opportunity, and even to-day in Ireland windows of this type are termed "Wyatt windows."

The effect of a pediment of the kind is unhappy, especially where, as is the case here, the pediment alternately frames a semicircular window and blank brickwork.



Mrs. Montague's House, Portman-Square.
James Stuart, Architect.

COMPETITION NEWS.

It must be understood that the following paragraphs are printed as news, and not as advertisements; and that, while every endeavour is made to ensure accuracy, we cannot be responsible for errors that may occur.

The list of current competitions is printed on page 58.

Folkestone Band Pavilion.

At a recent meeting of the General Purposes Committee of Folkestone Town Council the Town Clerk reported that Mr. E. T. Hall, the assessor *re* the band pavilion, had been asked to decide whether the amount of the premium of £100 awarded to Messrs. Palmer-Jones & Grant, the architects, should be deducted from the 1¼ per cent. on the total estimated cost of the building paid to them in accordance with Clause 22 of the Conditions of Competition, and the assessor had now given his award that such amount should not be deducted. The Corporation are therefore liable to pay Messrs. Palmer-Jones & Grant the further £100. The award of the assessor being in favour of the architects, the costs connected therewith (£9 3s. 6d.) are payable by the Corporation. The Committee thereupon considered the matter, and also the question of the ownership of the various amended designs submitted by the architects. At a subsequent meeting the Clerk reported that he had received from the architects the sketch plans prepared by them for amending their original plans. At a meeting of the Corporation last week the Committee recommended, and it was decided, to pay a further £100 to Messrs. Palmer-Jones & Grant in accordance with the assessor's award, in addition to their out-of-pocket expenses, amounting to £5 0s. 2d., and to pay the costs of such award, amounting to £9 3s. 6d., to Mr. E. T. Hall, the assessor.

Rubber Estate Factories, Netherlands East Indies.

H.M. Consul-General at Rotterdam (Mr. E. G. B. Maxse, C.M.G.) reports that the Council of the International Association for Rubber Cultivation in the Netherlands East Indies is organising an international competition for (1) a plan for a complete rubber estate factory principally for the making of "crepe," and (2) a plan for a complete rubber estate factory principally for the making of "smoked sheet." Both plans are to be drawn up in such a way that at first the capacity of the

factory will amount to 100,000 kilogs. of dry rubber per annum, which by three extensions can be increased to 250,000 kilogs. The projects should be accompanied by a detailed description of the factory and of the way in which the competitor considers the product should be treated, and also of the necessary machinery. Projects may be made in English, and should be sent in before March 1, 1916, either to the office of the Association, 13, Kneuterdyk, The Hague, or to the office of the *Algemeene Vereeniging van Rubberplanters ter Oostkust van Sumatra* at Medan (Deli). For the best project a premium of 1,500 florins is offered, and a premium of 500 florins will be given for the second best project. The conditions of competition may be consulted by persons interested at the Commercial Intelligence Branch of the Board of Trade, 73, Basinghall-street, London, E.C.

Florin = 1s. 8d.; kilogramme = 2·2046 lb.

OBITUARY.

Mr. Joseph Mason.

We regret to learn that the managing director of the Safety Tread Syndicate, Ltd., Barbican, E.C. (Mr. Joseph Mason), passed away on Friday evening last week. He was the original patentee of the Mason's Patent Stair Treads, and he had governed the Safety Tread Syndicate in the capacity of managing director since its inception in 1893. The funeral took place on Wednesday at Sutton Cemetery, Prittlewell.

CORRESPONDENCE.

Stone Altar.

SIR,—In further reference to "X. Y. Z.'s" questions *re* stone altars, there is also one in each of the following churches:—St. Margaret's, Ladywood, Birmingham; parish church, Norton-in-the-Moors, Stoke. POTTERER.

Tiling at the Palace of Peace, The Hague.

SIR,—Could any of your readers give me any idea of the kind of tiling used at the new Palace of Peace at The Hague? If anyone could add to the description a little sketch, or, better still, say where I could get an illustration, I should be greatly obliged. A. B. C.

GENERAL NEWS.

Professional Announcement.

Messrs. Moscrop-Young & Glanfield, Licentiate & A.R.I.B.A., have removed their offices from 20, Brook-street, W., to 72, Oxford-street, W. Tel. 2724 Museum.

The Architectural Association School of Architecture.

The annual exhibition of students' work and prize distribution will take place at No. 18, Tufton-street, Westminster, S.W., to-day, Friday, at 3.30 p.m. The exhibition will remain open daily (10 to 6) until July 23.

School of Architecture, University College.

An exhibition of students' work done during session 1914-15 will be on view in the Architectural Department, University College, Gower-street, from Saturday, July 17, to Saturday, July 24 (both inclusive), from 10 a.m. to 5 p.m. The exhibition includes drawings and designs made in the School of Architecture and the newly-founded Department of Town Planning. The Sir William Lever Prizes have been awarded as follows:—

Stage I.: Town Planning.—Scheme for a central railway-station on the Surrey side—First prize, £15, A. G. Wood; second prize, £10, H. N. Fisher and L. H. Shattock (bracketed equal).

Stage II.: Architecture.—The architectural development of a portion of the above—First prize, £15, H. N. Fisher; second prize, £10, I. Reicher; hon. mention, A. G. Wood.

Victoria and Albert Museum.

Mr. Herbert Allen has lent for exhibition a large collection of European—chiefly English—porcelain, which has exemplars—to the number of 900 and more—of every English factory of the eighteenth century. Another collection has been lent by Mr. A. L. Radford, F.S.A., consisting of small medallions and panels of English stained glass, mostly heraldical, and of the Tudor period, some of which come from Cowick Priory, near Exeter, and, it is believed, from Henry VIII.'s Palace of Nonsuch, pulled down in 1670.

London Museum.

Recent additions to the museum in Lancaster House comprise some pictures and drawings of old London that were obtained in the recent dispersal of Mr. Thomas's collection, and a Spitalfields loom of the eighteenth century, with a sample of silk made on it. Under the superintendence of the director, Sir Guy Laking, some models of the old London theatres are being made for the new section, relating to the story of the theatre in London. All the third floor of Lancaster House is being remodelled for uses of the museum and will be opened to the public.

Wargrave, Berks.

During the restoration, now in progress, of the parish church of St. Mary it is found that the red brick casing of the tower was laid over the original Norman work, which presents a fine example of Norman masonry. Several vaults have also been discovered beneath the chancel; there is no mention of them in the church records.

The Road Board Grants to Highway Authorities.

During the months of April, May, and June, 1915, the Road Board indicated additional advances to Highway Authorities, amounting in the aggregate to £109,903, of which £107,007 was by way of grant and £2,896 by way of loan. The advances made and indicated up to June 30, 1915, less indications cancelled, amount to £6,132,279. Of this total, £4,685,753 is by way of grant and £1,446,526 by way of loan. The formal grants completed, with the approval of the Treasury, during the last quarter, amounting to £125,847, were applied as follows:—Road-crust improvements, £123,045; road widenings and improvement of curves and corners, £419; reconstruction and improvement of bridges, £1,333; new roads and bridges, £1,050.

Ruined Reims.

With the title of "The Glory that was Reims" an exhibition of a remarkable series of 200 photographic pictures of Reims Cathedral was opened on July 14, the French National Fête Day, at the Leicester Galleries, Leicester-square. These pictures are enlargements of photographs of the sculpture and architectural details taken by the sculptor to the cathedral, who has been engaged on the work of restoration during the past twenty years. Side by side with these will be shown a considerable number of photographs of the ill-fated edifice taken since the bombardment. The exhibition will be held simultaneously with the one organised in Paris at the Musée des Arts Décoratifs of the Louvre, and collections of the same pictures will be opened at the Municipal Galleries of the principal English cities during the next few months. The proceeds of the admissions to the exhibition at the Leicester Galleries will be devoted to a French relief fund.

THE LONDON COUNTY COUNCIL.

THE usual weekly meeting of the London County Council was held on Tuesday in the County Hall, Spring-gardens, S.W., Mr. Cyril Jackson, Chairman, presiding.

Tenders.—The following tenders were received:—For cutting out existing, and providing and fixing, complete low-pressure hot-water heating apparatus at Winchester-street School (Finsbury, C.); for general repairs and minor new works to the Council's schools and other buildings, etc.; and for the reconstruction of St. John's-hill Bridge.

Loans.—Sanction was given to the borrowing by the Lewisham Borough Council of £500 for acquisition of property for depôt purposes; and to the Wandsworth Borough Council of £8,200 for contributions towards the cost of street widenings.

Rates of Pay of Employees in the Building Section of the Tramways Department.—It was agreed, on the recommendation of the Highways Committee, that the application of the employees in the building section of the tramways department for increases in their rates of pay be referred to the Permanent Way and Building Conciliation Board.

London Statistics.—The Local Government, Records and Museums Committee reported that Volume XXIV. of London statistics has been completed and placed on sale.

Fire-Stations: Building Work.—In a Report submitted by the Fire Brigade Committee it was stated that the Committee have decided, in view of the conditions arising out of the war, that no building work at fire-stations involving capital expenditure, except works already in progress, shall be proceeded with until further order. This decision involves the postponement of the extension of the Euston Station, of the building of a new station in substitution for the Tooley-street station, and of the enlargement and improvement of the Kennington station. The Committee have also given instructions that the usual painting work at fire-stations is not to be carried out during the current financial year, that only repairs which cannot be deferred are to be executed, and that certain proposed works of a minor character at fire-stations are not to be put in hand at present.

Places of Entertainment (Alterations).—The Theatres and Music Halls Committee have approved the arrangements indicated with respect to the undermentioned premises:—Alhambra Theatre of Varieties, Leicester-square—electrical work; Baker-street Hotel—positions for the intakes for both systems of lighting; 325, Caledonian-road—structural alterations; Elephant and Castle Theatre—new lavatories; Finsbury Park Empire—means of access to fan chambers; 144, High-street, Plumstead—railing off a space in vestibule; 103-7, Kingsland-road—proposed hot-water installation; London Hippodrome—provision of additional dressing-rooms; Lyceum Theatre—sanitary and ventilating arrangements; Morley Hall, Hackney—provision of rewinding room, enlargement of operating enclosure, and provision of three urinal stalls; 17, New Cut—arrangement of air inlets; New Gallery Kinema, Regent-street—alterations to grill-room; 260 and 262, North-end-road—reapproval of drawings showing proposed enlargement; Olympia, Shoreditch—rearrangement of ground floor; 42-4, Old Kent-road—ventilating arrangements and alterations to floor and raised portion; Plumstead-common-road (Globe cinema)—deviations from the approved drawings in the erection of the premises; Regent Palace Hotel, Glasshouse-street, W.—positions for hydrants and water mains; 5-9, Rotherhithe New-road—rearrangement of ground floor seating; Shakespeare Theatre, Clapham-junction—enlargement of operating enclosure; 148, Southampton-street, Camberwell—electric lighting, ventilation and power installations; 221, West Ferry-road—alterations to means of approach to lavatories; Wimbledon Park-road (proposed Lyceum Cinema)—revised arrangement of the proposed premises.

BOOKS RECEIVED.

PLAIN AND REINFORCED CONCRETE ARCHES. By J. Melan. (London: Chapman & Hall, Ltd.; New York: Jno. Wiley & Sons. 8s. 6d. net.)

LEVELLING AND ITS GENERAL APPLICATION (third edition). By Thomas Holloway and H. T. Tallack. (London: E. & F. N. Spon, Ltd. 2s. 6d. net.)

LAW REPORTS.

OFFICIAL REFEREE'S COURT.
(Before Mr. POLLOCK.)

Marshall, Knott, & Barker, Ltd. *v.* J. Jarvis & Sons, Ltd.

IN this case, which occupied Mr. Edward Pollock, one of the High Court Official Referees, for several days, the plaintiffs, a firm of timber merchants, of Grimsby, claimed from the defendants, Messrs. Jarvis & Sons, Ltd., builders and contractors, of Hackney-road, the sum of £546, balance of the price of timber supplied in connection with the building of St. Michael's Church, Grimsby.

Mr. G. A. Scott, in opening the plaintiffs' case, said that the defendants had paid into Court £350, with a denial of liability, and had also counterclaimed for damages. The claim was for Dantzic oak supplied with the cost of sawing and moulding. The account began in March, 1914, and continued until the following August, and amounted to a total of £888 11s. 5d., and credit had been given for £341 odd paid. The issues to be tried were merely as to the amount of oak supplied and the charges made for sawing and moulding, the defence being that the plaintiffs had over-

charged under both heads. The plaintiffs said that they had supplied 3,462 cubic ft. of timber, and the defendants said that the quantity should have been only 1,896 cubic ft. if the wood had been properly and carefully cut. The plaintiffs also charged for 21,940 ft. of sawing, and the defendants said it should have been only 12,000 ft. The plaintiffs are a very large firm of timber merchants, having extensive business premises at Grimsby, Liverpool, Hull, and London, and the defendants are builders and contractors in a large way of business, who are specialists in church building, and the counterclaim set up by them was practically, said counsel, under three heads. In the first place they claimed to deduct a small amount of £6 5s. for discount upon cash payments made; but plaintiffs said that the payments were not made in time to enable them to claim the discount. The second head was £45 10s., for delay in delivery, and the plaintiffs admitted delay, but said it was caused by defendants not giving proper instructions to enable the contract to be carried out. There was also an allegation that some of the timber supplied was knotty; but plaintiffs said that that was the risk of the defendants.

Evidence having been called in support of plaintiffs' case,

Mr. Cartwright-Sharp, for the defence, said that independent expert witnesses would show that there had been errors in the plaintiffs' calculations, and that nothing like the amount of timber claimed for had been cut up. Defendants also said that of the quantity claimed for, 200 pieces were not delivered, and they claimed damages in consequence. It was, said counsel, possible to measure from the delivery tickets the quantity of finished product supplied, and that was only 1,200 ft. The plaintiffs' contention was that to produce that 1,200 ft., 3,400 ft. of logs were required, and he would, he said, be able to prove that 1,800 cubic ft. of logs only would be required, or, making allowances for special difficulties, 2,000 ft. at most.

The Official Referee, after hearing a number of witnesses for the defence, found on an adjustment of figures that plaintiffs were entitled to payment out of £115 of the £350 paid into Court. He accordingly gave judgment for the defendants on that basis, and ordered them to pay plaintiffs' costs up to the date of payment into Court, the plaintiffs to pay the costs subsequent to that date.

Judgment was entered accordingly for defendants.

COURT OF APPEAL.

(Before Lords Justices SWINFEN EADY, PHILLIMORE, and BANKES.)

Action against Builders' Merchants for Personal Injuries:

Osborne *v.* A. Fortescue & Sons, Ltd.

IN this case the defendants appealed from a verdict and judgment in favour of the plaintiff for £350 damages and costs for alleged personal injuries entered at the trial before Mr. Justice Scrutton and a jury.

The plaintiff was a carman residing at Spring-gardens, Vauxhall-wall, Lambeth, and the defendants are builders' merchants, contractors, and wharfingers, of Mare-street, Hackney. The plaintiff's case was that on January 17 he went to the Baltic Wharf, owned by the defendants, to cart away logs of wood that were being unloaded and lowered into his cart by a crane. The tail of his cart was close to a trapdoor that was open to receive rubbish that was being tipped into a barge below. As the logs were being lowered near to the tail of the cart, the plaintiff stepped back, fell down the trapdoor, and alighted on the barge 50 ft. below, receiving serious injuries.

Mr. Ellis Hill, for the appellants, said the case was tried before Mr. Justice Scrutton and a jury, the latter finding that the plaintiff was invited on to the premises and the defendants should have taken precautions to protect him from danger. The jury also found that the crane driver was at fault, and, though the plaintiff ought to have known of the open door, he was not guilty of contributory negligence. It was proved at the time that it was the plaintiff's tenth visit to the wharf or jetty, and that he had had the open door pointed out to him. Therefore he knew of the danger and should not have stepped back.

Without calling on counsel for the respondents, the Lords Justices held that the verdict and judgment could not be disturbed. There was ample evidence on which the jury could find in the plaintiff's favour. He was an invitee on the defendants' premises, and he was directed by a servant of theirs to a position of danger. Though the fact of the door being open was known to the plaintiff at one time, he may have forgotten the circumstance, as the circumstances changed. That could not be described as contributory negligence on the part of the plaintiff. In his opinion the appeal should be dismissed, with costs.

COURT OF APPEAL.

(Before the MASTER OF THE ROLLS and Lords Justices PICKFORD and WARRINGTON.)

A Disputed Building Contract: H. Dakin & Co., Ltd. *v.* Lee.

THIS case was heard last week upon the appeal of the defendant, Mrs. Lee, from a judgment of a Divisional Court composed of Justices Ridley and Sankey, in favour of the plaintiffs, setting aside a judgment of Mr. Muir Mackenzie, the Official Referee, in favour of the defendant.

The plaintiffs are builders and contractors, of 151, Upper Richmond-road, Putney, the defendant being a lady who carries on a girls' school in the Wimbledon Park-road, S.W., and the plaintiffs brought the action to recover the balance they alleged to be due to them under a building contract for the repairing of the defendant's premises and the price of work done and materials supplied.

The Official Referee found, after a nine days' trial, that as regards £91 8s. 6d. for extras, the plaintiffs were not entitled to that sum, and if they had deviated from the contract, that was done at their own risk. The work which the plaintiffs did involved the rebuilding of a bay window in the front of the house, which was supported on two iron columns. In the contract Messrs. Dakin undertook to provide new columns, but as they could not get hollow iron columns of 5-in. diameter, they used two 4-in. solid columns, which were of equal strength and equally good for the purpose for which they were used. The specification included the underpinning of the side wall, and the plaintiffs had allowed in the estimate for a depth of 4 ft. of concrete below the underpinning wall. The Official Referee stated that, although the specification did not specify any depth of concrete, it ought to have done, because in the estimate the plaintiffs had allowed for a depth of 4 ft., but only put on an average of 2 ft. The top of the bay window was supported by a wooden rest, and the specification provided for two rolled steel joists to be put across the bay window, and these were put in. The specification also provided that they were to be bolted together; but they were not bolted together, but were cleated together, which, it was alleged, was quite as effective for that purpose. Those were the three deviations. The Official Referee held that the work which the plaintiffs had done was done under a written contract which was one entire contract; that the contract had been broken by the plaintiffs, and that therefore the plaintiffs were not entitled to recover. There was a certain amount of extra work done outside the contract altogether, and in respect of that the Official Referee had given the plaintiffs a certain sum, which was smaller than the amount paid into Court by the defendant, and therefore he entered judgment for defendant. From that decision the plaintiffs appealed to the Divisional Court, which allowed the appeal, Mr. Justice Ridley holding that where a contract was substantially completed, those who received the benefit of the work must pay. He said it could not be contended that the work the plaintiffs had done was useless, and there was no evidence which entitled the Court to find that the contract had not been executed, although there were some details which it was necessary to put right. Judgment was therefore entered for the plaintiffs for £227, with costs. Hence the present appeal of the defendant.

Mr. Hume Williams, K.C., and Mr. Cassels appeared in support of the appeal; and Mr. J. Bromley Eames for the respondents (the plaintiffs).

At the conclusion of the arguments of counsel for the appellants, and without calling upon counsel for the respondent, their Lordships held that the Divisional Court had applied the proper principle of law, and dismissed the appeal with costs.

KING'S BENCH DIVISIONAL COURT.

(Before Justices AVORY and LOW.)

Bricklayer's Claim for Compensation under Employers' Liability Act: Rashbrook *v.* Sir John Jackson, Ltd.

ON the 7th inst. this case was heard upon the appeal of the defendants, who are Government contractors, from a decision given against them in the Westminster County Court by Judge Woodfall in an action brought by a bricklayer named Rashbrook for compensation under the Employers' Liability Act.

The appellants carried out an Army contract at Durrington, near Salisbury, where they erected wooden huts for the troops. Rashbrook, who was employed as a bricklayer for the construction of the brick foundations, was pulling out a brick from a stack when some of the bricks rolled on his wrist. He sustained a sprain which incapacitated him from work. Rashbrook sued his employers for compensation, on the ground that, owing to negligence in supervision, the bricks had not been properly stacked, and the jury awarded him £60.

Mr. Shakespeare, for the appellants, stated that the jury in the first place held that there was no negligence; but the Judge recharged the jury, and held that there was. He contended that the Judge was bound by the first answer given by the jury, and that there was no evidence of any negligence in the superintendence.

Mr. Moyser, for the respondent, argued that there had been negligence owing to the staff being short-handed.

Mr. Justice Avory, in giving judgment, said the appeal involved an unusual question, but it was one which they had no difficulty in deciding. He had come to the conclusion that the Judge was wrong in putting a second list of questions after the jury had already given their answer to the first question. The appeal would be allowed with costs.

Mr. Justice Low concurred, and the appeal was accordingly allowed with costs.

Further leave to appeal was refused.

Surveyors' Charges in Small Jobs.

IN the Bow County Court recently, before his Honour Judge Smyly, K.C., a surveyor's powers in connection with small building jobs and a Chingford builder's charges were called into question. The plaintiff in the action was Helen Davy, of 479, Commercial-road, Stepney, house property owner, and she sued Talett's Essex Sanitary Steam Laundry, Ltd., of 132-136, Romford-road, Stratford, to recover £7 17s. 6d., the cost of repairing a wall and railings at 25, Selway-road, Stratford. The defendants' motor-van dashed into the wall, knocking it down to a length of 12 ft. and a depth of 2 ft., carrying away the railings with it.

Mr. Forbes was counsel for the plaintiff, and Mr. Sergeant represented the defendants.

Counsel said liability was admitted, the only question being as to whether the charges were reasonable. The rebuilding had cost £5 15s. 6d., and had been paid, while the surveyor's fees were £2 2s.

Mr. Wm. Farrant, of 66, Old Church-road, South Chingford, a builder, said he carried out the repairs, and materials alone cost him £3 15s. If a firm at East Ham had been willing to do the job for £2 15s., they were welcome to it for him.

Mr. Watts Johnson, a civil engineer and surveyor, of 3, Broad-street-buildings, E.C., said he heard from Miss Davy of the damage, and went at once. He wired for the builder to start the work, and then went off to Thames-street to try and match the railings. It was two days before he could do so, and then he had to compromise. He considered his charge of £2 2s. most moderate, as it worked out at about 6d. an hour for what he did. In cross-examination he said it was not the builder's work to go hunting for railings; it was the surveyor's. If the builder was not told what he had to work to, and what he had to use, he could not possibly estimate.

For the defence, Mr. Thos. Clements, of Messrs. Clements Brothers, Ltd., 77, York-road, East Ham, builders, said the job could be done easily for £2 15s. There was no difficulty about the railings, which were of the ordinary "Butterfly" pattern, and were easily obtainable. The only real difference was the foundry. He could have got them at a good many places, but he did not see that he was called upon to advertise them. He did £5,000 worth of this sort of work a year.

Mr. Albert Smith, a surveyor, said there was not the slightest necessity for a surveyor to be employed. He had been engaged on thousands of pounds' worth of work in his time, but never on such a trumpery job as this. He estimated the work at £4 5s.

Judge Smyly said as the defendants did not call in a builder themselves and put the matter right, he could not see that it was in any way unreasonable for the plaintiff to engage a surveyor. Again, as to the builder engaged, he did not think it was part of his duties to go running round to the cheapest man; he knew a reliable builder, and that was good enough for the surveyor. It was obvious there was some bad estimating somewhere for there to be a difference of between £2 15s. to £7 17s. 6d. He considered the builder's charges reasonable, but did not think the job needed the surveyor's constant supervision, so he should reduce his fee by £1 1s. His verdict would be for the plaintiff for £6 16s. 6d.

Judgment was entered accordingly, with costs.

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ILLUSTRATIONS.

The Royal Bank of Scotland, Bishopsgate, E.C.

WE give this week a general view, which forms one of our inset illustrations, of a vigorous building by the late Thomas Chatfeild Clarke. The underlying inspiration of the design is taken from the Venetian school of the Italian Renaissance. There are slight defects in the compositions of the front, namely, a lack of sympathy between the arcaded basement story with its attached columns and the Order story of Corinthian pilasters. Both features are splendidly conceived and executed, but the junction of two stories at the level of the flat band is weakly handled. If reference is made to our illustration it will be seen where the fault is: the sculptured spandrils of the arcade are overweighted by the scale of the pedestals and the balustrading. There are many buildings of the late seventies and early eighties in the neighbourhood of Lombard-street which are so hemmed in by their neighbours and overshadowed by the narrow streets as to pass almost unnoticed. We hold no brief for these structures, but we desire, by lifting the veil from their obscurity, to show that even thirty years ago a modified version of Italian architecture was honestly pursued. In pointing out the academical faults of the building under discussion our object is to call attention to the fact that architectural scholarship to-day is but little understood, and to make the trenchant remark that certain features of modern Classic design which pass for original ideas are nothing more or less than caricatures of good taste. The very nature of the City, with its narrow streets and courts, demands careful study, and if occasionally such pleasant groupings of office buildings are encountered, as is the case on the northern side of Lothbury, then it cannot be said that "east of St. Paul's all is bad."

SS. *Aquitania.*

THESE illustrations show parts of the first-class smoking-room on the Cunard ss. *Aquitania*. The architects for this work were Messrs. Mewès & Davis.

The Hall and Premises of the Painter-Stainers' Company.

THE hall and premises of the Worshipful Company of Painter-Stainers are situated in Little Trinity-lane, and adjoin the Mansion House Station. The property was conveyed to the Company in 1532 by Sir John Brown, Sergeant Paynter to King Henry VIII. The deeds relating to the property date back to 1423, the second year of King Henry VI.

The old hall, prior to the Great Fire of London, was a house of some importance. Sir John Evelyn, in his Diary, states that the Commissions for supporting the sick and wounded in the war had permission to meet here. Under date, November 10, 1664, he writes:—"Painters' Hall was lent to us to meet in. In the great room were divers pictures, some reasonable good that had been given by several of the Wardens and Masters of the Company." The Commissions continued to meet here till June 3, 1666, and two months later the Great Fire destroyed the house. The rebuilding was commenced in 1668, and the work finished at the end of 1669. The hall is practically as originally built. The work that is now being done consists of the removal of five shops and the beadles' house, which stood between the hall and the Mansion House Station, and on this site the enlarged kitchen, etc., will be built, and a new staircase to the hall in order to comply with the L.C.C. requirements; this is to be of solid mahogany. The other part of the new building will be chambers, a portion of which will be occupied by the club as offices.

The alterations to the court-room and hall have become necessary owing to the increase in the livery. All the old features of the court-room and hall will be preserved and the area and offices that have been done away with have no architectural value. The Painted Chamber is one of the most interesting rooms in the City; the whole of the walls are panelled and covered with paintings—some of considerable merit. Some characteristic old glass will be restored and placed in the court-room windows. The interesting old doorway will be preserved *in situ*, but the front of the hall will be rebuilt, and instead of as now, the door being on one side of the building, the doorway will make the central feature. The chambers have the floors at different levels to the hall, so the elevation is treated as a separate building, and above the ground floor will be faced with Crowborough bricks. The ground floor story throughout will be of Portland stone.

The contractors are Messrs. J. E. White & Co., 89, Newington Butts. Messrs. Lindsay & Co., 15, North Wharf, Paddington, are supplying the steel construction. Mr. H. D. Searles-Wood, F.R.I.B.A., 157, Wool-exchange, E.C., is the architect.

West China Union University.

ON January 24, 1913, we illustrated the accepted design of the medical college by Messrs. Fred Rowntree & Son. Mr. Fred Rowntree paid a visit to the site, which is situated in Chengtu, the ancient capital of Szechuan, the western province of China, in the spring of that year. Arrangements were then made for commencing building operations, and these are now on the way. The bird's-eye view illustrated in the present issue gives a general idea of the range of buildings contemplated. The main central plot shown in the foreground will be occupied by three buildings only, the assembly hall being the central and dominating feature, flanked by the library and administration blocks respectively. The bird's-eye view also shows the group of medical buildings on the left hand of the picture; the central groups behind the assembly hall comprises physics, chemistry, applied science, and normal school buildings, with chapel building at the southern end. The buildings in the extreme wings denote residential colleges for the students.

The pencil drawing of the assembly hall shown in the present issue indicates how closely national architectural characteristics are being adhered to in the designing of the university buildings.

MEETINGS.

FRIDAY, JULY 16.

The Architectural Association School of Architecture.—Annual exhibition of students' work and prize distribution. 3.30 p.m.

WEDNESDAY, JULY 28.

National Federation of Building Trades Employers.—Semi-annual meeting, Masonic Hall, Great George-street, Leeds. 10 a.m.

FIFTY YEARS AGO.

New St. Thomas's Hospital.

THE governors of St. Thomas's Hospita have now under their consideration, and will probably determine on Tuesday, the designs prepared by Mr. Henry Currey, for the new hospital proposed to be erected on the south bank of the Thames, and which are set forth in twenty-two drawings, including one very large and very good perspective view, showing the aspect the building, or rather pile of buildings, will present from the river, along which it will extend 1,200 ft. It comes close up to Westminster Bridge, on the right-hand side (when going towards Astley's), and shows towards the river seven separate blocks, four stories high above ground, connected by corridors and service-buildings, the pavilion principle being, of course, adopted.

[*** We give the above extract from the *Builder* of July 15, 1865.]

EXISTING ENTRANCE TO THE HALL REPAIRED
EXISTING ROOF FLAT
NEW PANELLING HERE TO MATCH THE OLD REPAIRS
PANELLING FROM OLD SCREEN REPAIRED HERE
SECTION CC.

The Hall of the Painter-Stainers' Company: Alterations and Additions.

Mr. H. D. Searles-Wood, F.R.I.B.A., Architect.

CONSTRUCTION SECTION.

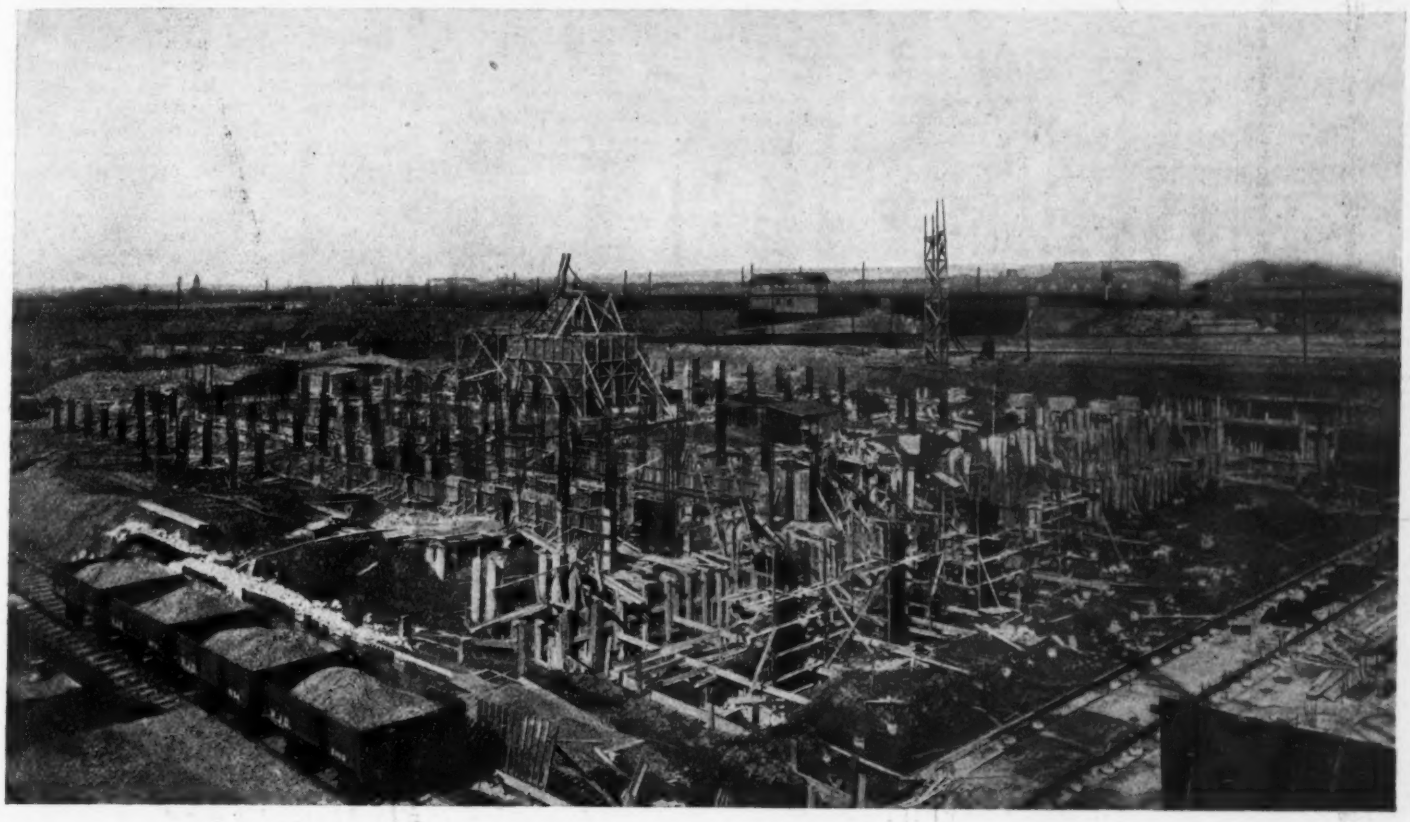
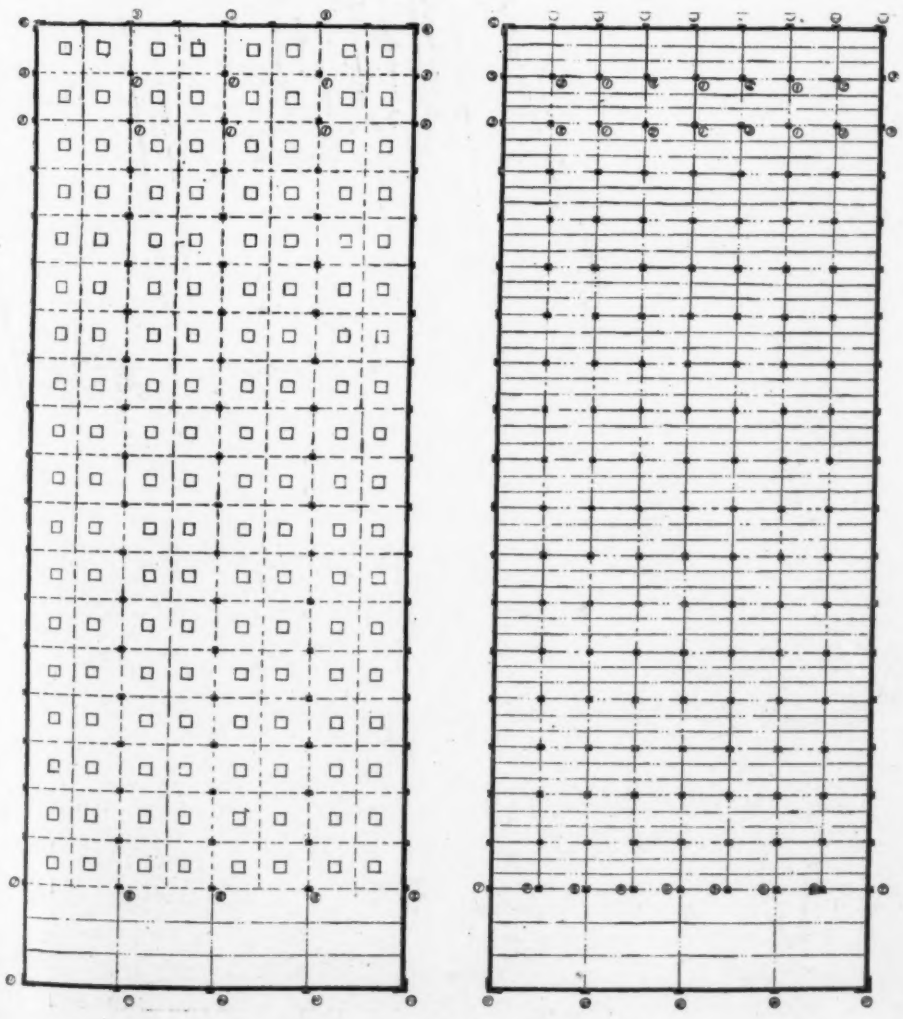


Fig. 4. View taken in March, 1915.

HULL JOINT DOCK GRAIN SILO.

NEW grain silos are being erected at King George Dock, Hull, by the N.E. and H. and B. Railways, these being situated at the end of the north-west arm of the dock and covering an area approximately 330 ft. in length and 270 ft. wide, and very efficient machinery is being installed which will unload the grain from ships at the quay and convey it directly to the receiving house. The building, which is constructed entirely in reinforced concrete, has a height of 96 ft. above the quay level, and the distributing chamber is situated below this. General plans and sections of the building are illustrated in Figs. 1, 2, and 3, these showing a portion of the work only. The receiving-house extends across the whole front of the building, about 90 ft. from the face of the quay; and immediately behind the receiving-house are placed two silos, each containing 144 bins, 12 ft. square and 50 ft. deep, giving a total capacity of 2,000,000 bushels, or 40,000 tons, of grain. In addition to this storage accommodation two floors for the sacking and handling of the grain are provided below the silos, and one floor and roof above the latter.



Figs. 1 and 2. Plans of Upper Floors.

The floors over the silos are connected by reinforced concrete bridges at each end, and in the space between the two silos and at each side covered wagon ways are being formed, each having two lines of rails for bringing the trucks up to the required points for loading and unloading. The longitudinal section indicates the position of the distribution chamber, this being 16 ft. below the quay level and occupying the whole of the space between the quay wall and the face of the receiving-house. The roof of this distribution chamber is kept down 3 ft. below the quay, and it will be covered with earth and paved to allow the whole of the space between the quay wall and the receiving-house to be used for traffic passing round the dock. Leading from the distribution chamber and receiving-houses are four reinforced concrete subways, which extend to the full length of the silos, and in these conveying machinery will be installed which will enable the grain to be speedily transported. Subways have also been constructed below the ground in front of the warehouses behind the dock walls. Owing to the nature of the soil it was necessary to employ piles in the foundations, and these were driven in groups under each column and pier to a depth exceeding 40 ft. Where the subways occurred under the silos the columns were continued through and the piles were driven lower and finished at the floor level of the subway. There are six main interior rows of reinforced concrete columns in the distributing chamber, and these have one foundation pile only under each, the columns being spaced about 12 ft. apart transversely and 6 ft. longitudinally. In the upper part of the building the column positions are governed by the bins, one being placed at each corner with thin vertical reinforced walls

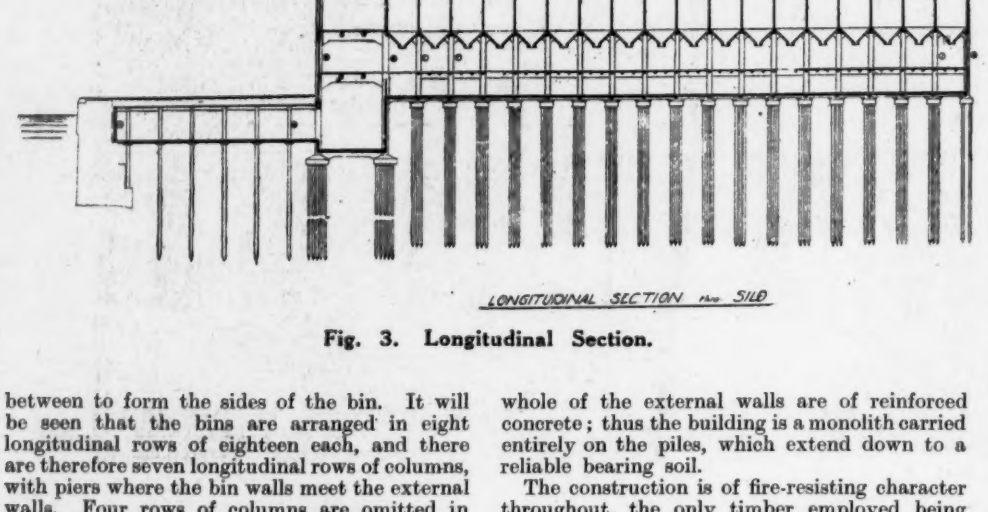


Fig. 3. Longitudinal Section.

between to form the sides of the bin. It will be seen that the bins are arranged in eight longitudinal rows of eighteen each, and there are therefore seven longitudinal rows of columns, with piers where the bin walls meet the external walls. Four rows of columns are omitted in the construction of the top floor and roof, and the spacing transversely is increased to 24 ft., while the longitudinal spacing of 12 ft. is maintained. Main beams are placed between the columns, and these, in turn, support the secondary beams and slabs forming the roof. The elevator chamber, which runs across each silo above the receiving-house, is about 24 ft. wide, and this is kept free of any internal columns, as seen on the plans, the floors being constructed with main beams 24 ft. apart and secondary beams spaced at about 8 ft. centres. The hopper bottoms are formed in reinforced concrete sloped from the triangular-shaped beams, which occur under the silo walls, and brackets are introduced on the columns at this level to cut down the length of these beams. The lowest floor, which occurs immediately over the capping to the piles, is constructed with beams and slabs carried directly by the piles and independently of the surface ground, and the whole of the external walls are of reinforced concrete; thus the building is a monolith carried entirely on the piles, which extend down to a reliable bearing soil.

The construction is of fire-resisting character throughout, the only timber employed being for some of the doors, and the staircases will all be executed in reinforced concrete, metal, or stone. Practically no maintenance will be required, and this is an important consideration in a building of this size and type. The two photographic views show the commencement of the work in March and the progress that had been made up to the end of May, and some idea of the magnitude of the scheme may be gathered from these views.

The work is being carried out under the supervision of Mr. Charles Watson, M.Inst.C.E., the Chief Engineer for Docks to the N.E. Railway Company, by the British Reinforced Concrete Engineering Company, Ltd., of 1, Dickinson-street, Manchester, late of 82, Victoria-street, Westminster, B.R.C. reinforcement being used throughout the whole of the work, and the machinery and equipment is being supplied by Messrs. H. Simon & Co., of 20, Mount-street, Manchester.

COKE BUNKERS AT GLASGOW.

THE advantages of reinforced concrete over steel and timber construction can probably be realised more fully in the building of coke bunkers than any other type of structure, on account of its fire-resisting qualities and lack of maintenance costs, and a very good example of a reinforced concrete coke bunker is provided by the scheme which has just been completed at the Dalmarnock Gasworks of the Glasgow Corporation, to work in conjunction with the new vertical retort plant that has been installed. To appreciate the value of the material employed it must be understood that the coke is deposited in the bunkers after being drawn from the retorts, and although water is applied to extinguish the fire, there is a great tendency for the coke to rekindle, and thus a fire-resisting material is absolutely necessary. If steel is used buckling and distortion are unavoidable, and the bunker in consequence becomes seriously damaged, but this distortion does not occur with reinforced concrete, and this latter material is therefore becoming almost universal with managers and engineers dealing with gasworks. The over-all dimensions of the bunker mentioned herein are 104 ft. long by 84 ft. wide by 48 ft. high from the rail level, and it has a total capacity of about 4,000 tons. It is divided into two sections by a transverse wall, and these sections are in turn divided into four subsections by other walls to enable stores of coke of four different sizes being stocked ready for delivery. A general view of the bunker is shown in Fig. 1, and it will be seen that it is supported by columns to allow the passage of traffic under the building, and these columns are constructed in reinforced concrete of sizes varying from 18 in. square to 36 in. square.

The loads on the main columns are over 300 tons each, and as the bearing capacity of the soil could not safely be considered as more than 1 ton per square foot special continuous reinforced footings were arranged under each row of columns.

The hopper bottoms, which are sloped at an angle of 45 deg., are formed with reinforced concrete 8 in. thick, and the outlets are placed at a height of 10 ft. above rail level to allow railway wagons and carts to pass directly

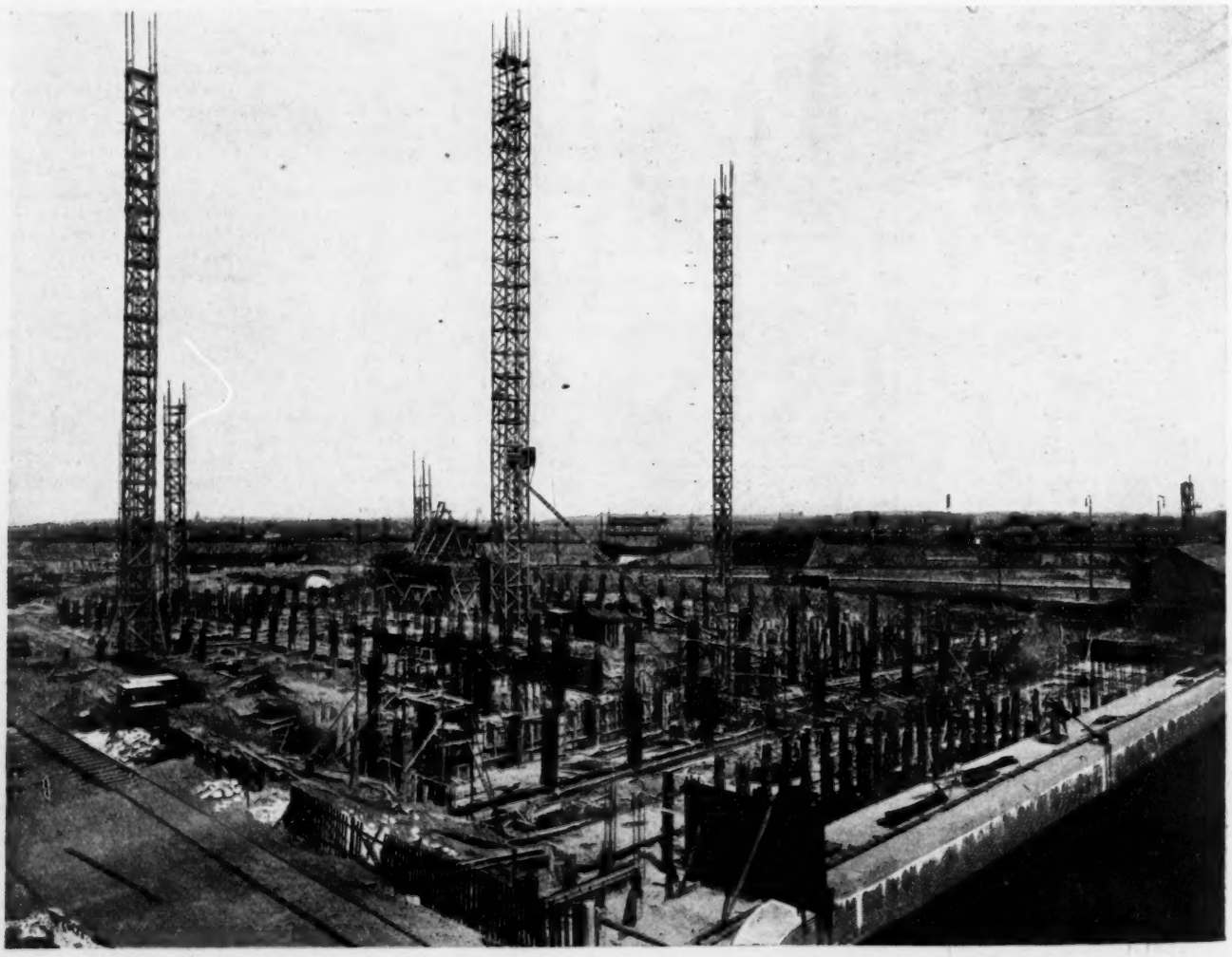


Fig. 5. Hull Joint Dock Grain Silo: View taken at the end of May, 1915.

under the hopper valves, and the coke is thus discharged directly into them.

Owing to the compartments being of varying sizes, and the divisional walls being exceptionally long without a break, they were stiffened by the introduction of vertical members connected by cross ties and bracings from side to side of the bunkers.

The external walls are also stiffened by piers, which project on the outside at regular intervals throughout the length, and these piers are connected to horizontal beams at the top and bottom of the wall, thus forming recessed panels, which improve the appearance of the structure while providing efficient and economical construction. These projecting piers can be seen in the photographic views in Figs. 1 and 2, and the latter also shows the hoppers at the bottom of the bunker.

The general scheme was designed and supervised by Mr. Alex. Wilson, M.Inst.C.E., Manager of the Gas Department of the Glasgow Corporation, and the details for the reinforced concrete construction were prepared by Messrs. Johnson, Clapham, & Morris, Ltd., of Manchester, and carried out by them on their "Lattice" and "Keedon" system, the subcontractors for the concreting being Messrs. Macdonald & Mackinley, of Glasgow.

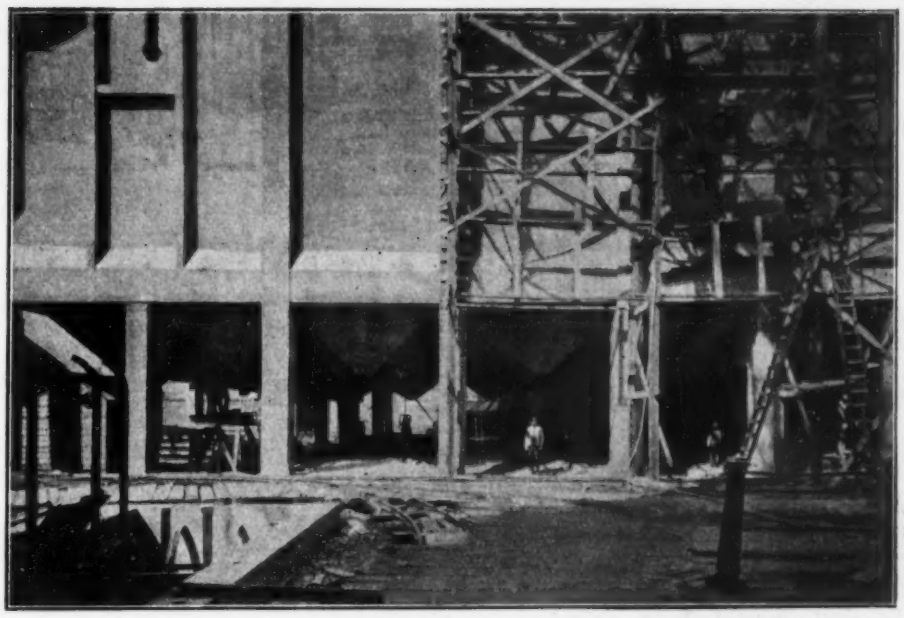


Fig. 2. Coke Bunker, Glasgow: View showing Hoppers.

LOSS OF VISIBLE SKY AREA AND SUNLIGHT IN ANCIENT LIGHT CASES.

By PERCY J. WALDRAM, F.S.I.

IT is proverbial that few people could describe from memory things which they are in the habit of seeing every day. Not many of us, for instance, could pass a creditable examination upon the facial characteristics of our acquaintances. It would therefore perhaps be unreasonable to expect much to be known about such a pre-eminently everyday phenomenon as daylight, or as to the passage of the sun through the heavens.

At the same time, this lack of observation of ordinary things is not very generally recognised, nor is the almost absurd inability of the eye to measure full daylight, nor the extremely scanty nature of our knowledge of daylight.

For instance, an ordinary person when asked to give the midwinter noon elevation of the sun would probably put it at about 25 to 30 deg., an error of nearly 100° per cent.; whilst in July, when one looks at the sun in the middle of the day, it is really difficult to appreciate the fact that it is 30 degs. or more below the zenith.

The average observer, knowing perhaps that he can estimate the intensity of artificial light quite closely, would scarcely credit the fact that what appear to him to be differences of daylight of about 10 per cent. are really perhaps 1,000 or 2,000 to 1.

Few experts could give the least idea in figures of the variations in daylight, not only between winter and summer on days of similar weather, but even of the range for any given day.

Yet one constantly hears with regard to the light in premises evidence given which is admittedly based upon the impressions received on a single visit, when the all-important observation of the weather, if made at all, is expressed in an eloquently perfunctory note giving little or no real information.

One also frequently sees rectangular diagrams put in showing the percentage of sky enjoyed and lost, carefully worked out on flat rectangular areas. No surveyor or typographer would expect a Mercator's projection of the convex curved surface of the earth to be devoid of distortion, but similar flat projections of the concave surface of the sky are freely used in conjunction with flat projections of opposing buildings without the slightest attempt to introduce the necessary distortion or correction to obtain a correct result. The necessity for doing so was pointed out over fifty years ago by Cox in "The Law and Science of Ancient Lights," and it is reiterated in Molesworth's "Obstruction to Light."

To those who have traced the path of the sun on a celestial map, and to those whose school days are not too far remote, it is no news that the sun rises north of east in summer and south of east in winter, and sets similarly north and south of west at those times. A person asserting that the sun always rises due east and sets due west would be regarded with some contempt. Yet is it quite certain that this mistaken view is held only by uneducated or ignorant people? Some years ago the writer was cross-examined by an eminent K.C., who tried to set it up as a fact favourable to one of his arguments. The expert witnesses supporting the rest of his case failed signally to convince a country special jury, who perhaps were not aware that advocates do not always ask their expert witnesses to check the scientific accuracy of apparently telling points. And this is not an isolated experience. Quite recently, in a London ancient light case, another judge had occasion to correct another K.C., equally eminent, with regard to precisely the same point, and again the expert witnesses on that side found the court unsympathetic.

It is possible, therefore, that a short article dealing only with the calculation of obscured sky area and direct sunlight may prove a useful summary of principles, not necessarily to instruct the readers of this journal, but rather to help to convince any of their clients whose knowledge may be more hazy.

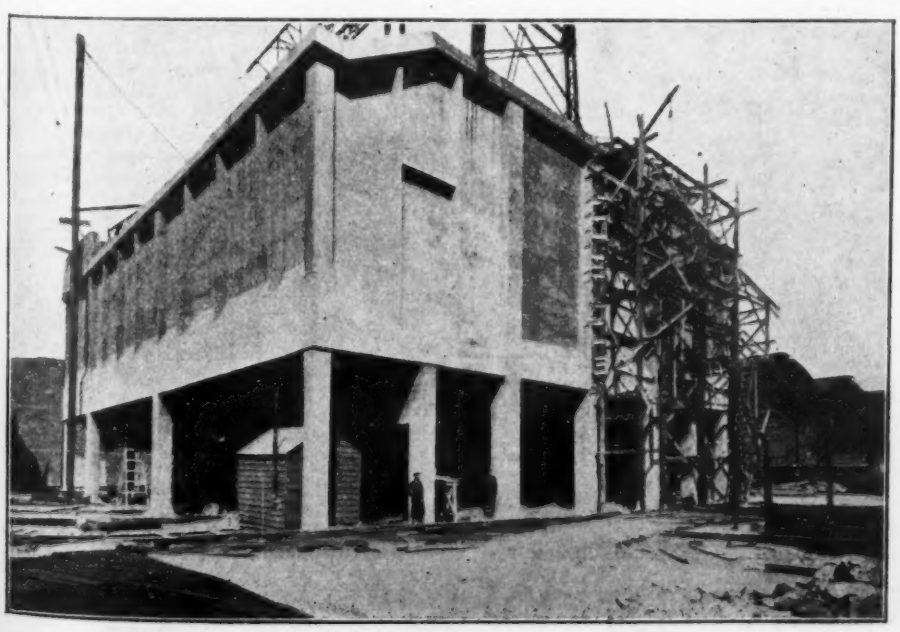


Fig. 1. Coke Bunker, Glasgow.

Sky Aspect.

For all practical purposes the sky may be considered as a concave hemisphere of luminous material, divisible, like the convex surface of the earth, by lines of celestial latitude and longitude. A flat projection of such a divided hemisphere is shown in Fig. 1. As in the case of a terrestial map, the inevitable distortion foreshortens the vertical angular divisions, and also the lateral divisions in any horizontal ring. The angular distance between any two meridians of celestial longitude is, of course, the same in high latitudes near the zenith or celestial pole as in those near the horizon or celestial equator; but because these angular divisions are proportions of circles of different diameters the area of sky enclosed, like a square degree on the earth's surface, becomes smaller from the horizon to the zenith.

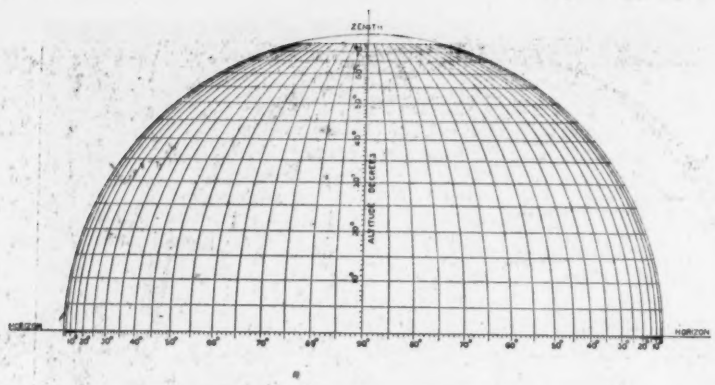
The diameter of the circles upon which angular horizontal distances are measured varies according to the cosine of the angle of elevation. If, therefore, the same value be attributed to each "square" of sky, this variation would only be exactly corrected if the value of the light received varied inversely as the cosine of the same angle. That it does so vary is a well-known axiom with regard to illumination received on a horizontal plane, and the variation in the size of the squares may therefore be neglected for horizontal illumination.

The effect of the lateral and vertical foreshortening is to show as being small what are really larger areas of actual sky. The determination of the value to windows of each element of sky is still the subject of experimental research, and the value to be attributed to the particular area of sky lost must depend upon the circumstances of each particular case.

The area of sky from which light can enter a window vertically and horizontally is obviously that enclosed between planes touching the reveals, as in Fig. 2

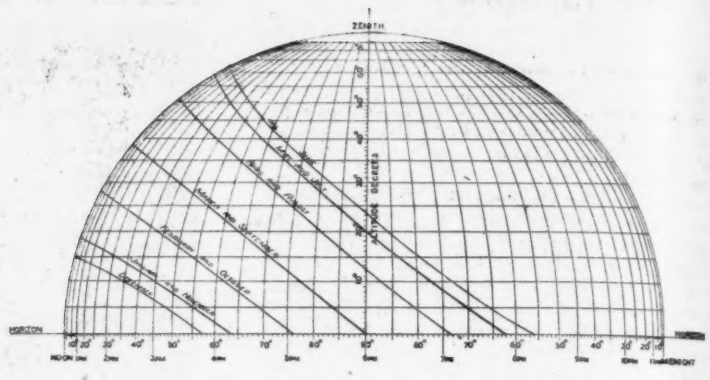
Relative Values of Different Elements of Sky.

The relative value of the rays of light entering the room from different parts of this total visible sky varies considerably. Objects are not seen by the total light falling upon them,



FLAT PROJECTION OF QUARTER SPHERE

Fig. 1.



APPARENT PATH OF THE SUN FACING WEST

Fig. 4.

but by that portion of it which is reflected into the eyes of the observer. The customary positions in which reading, writing, and the majority of industrial operations are carried out are such that this reflected light which renders an object visible is received chiefly in directions approaching the vertical.

For this reason light from a high angle is of great relative value in offices and workrooms, and the most convenient arrangement of furniture, desks, benches, etc., generally requires this high angle working light to be received in directions more or less at right angles to the window wall. It does not follow, by any means, that light falling in other directions is valueless or even of merely subsidiary importance. All light entering a room is reflected and counter-reflected in so many directions that in some rooms there are portions adequately lit almost entirely by reflected lateral light. To rooms with a single window in one angle and to many staircase windows lateral sky may be even more important than that directly in front. Sitting-rooms, schools, hospital wards, and libraries also require for their convenience and comfort a substantial proportion of low angle light to illuminate the walls and to afford aspect, although such light would be all but useless on a drawing table or a workshop bench.

It is, therefore, correct to consider as a general case the entire sky area subtended at a window; the relative values of its different portions for different purposes being considered subsequently with due regard to the special requirement of the room in question.

Light Reflected from Building Fronts.

It is also a fact that light reflected from clean and light coloured buildings or glazed bricks or tiles is a substantial element in many cases.

A room facing north into a narrow light well may receive more light from a new white glazed brick wall than from blue sky. Under different conditions of weather the reverse may be the case, and a few years later possibly the obstruction may be detrimental at all times. But whether the substitution of an obstructing building for sky area be a good or a bad bargain is a point which may also be left for consideration in each particular case. It does not affect the method of accurately ascertaining the scope of that bargain.

Projection of Opposing Buildings on Diagrams of Visible Sky.

It would at first sight appear to be a comparatively easy matter to superimpose the lines of celestial latitude and longitude upon perspective or photographic views showing the original and the altered aspect, and thus determine the extent of the sky area obscured. But such a view is what the eye sees in one direction only, whereas the window received light in different directions simultaneously. It is, in fact, an eye looking in several directions at once.

Imagine, for instance, a large square block standing in and viewed from the centre of a domical glazed conservatory forming a hemisphere struck from the point of vision as Fig. 3. If one edge A of the screen were in line with the direction of view E A, that edge would coincide with a vertical glazing bar, but the other edge would not. If, however, the view were taken in the direction E B, then the edge B would coincide with one glazing bar and the edge A would cut into different divisions.

If we could look in both directions simultaneously, as a window does, then both vertical sides would coincide with the vertical meridional lines. The glass area shut off from the central eye would be that enclosed by the edges of planes generating at the central eye and touching the sides of the block, or if the eye were replaced by a central lamp then the glass area shut off would exactly be covered by the shadow of the block cast upon the glass.

What we have to do, therefore, in order to ascertain the sky area shut off from a window by certain buildings is to project the maximum opening angles, vertical and horizontal, of the window on to a hemispherical surface of which the window is at the centre, and then project on to the same surface the shadows of the obstructing buildings, considering the window as a lamp.

If we could content ourselves with a view taken in one direction only, then the shadow might be projected on to a flat sky, and the ordinary or perspective view would result. But this would not give the percentage of sky which is prevented by the obstructing buildings from throwing its light into the room, nor would it serve to indicate the direct sunlight lost to the room.

The shadow cast upon a curved surface by rectangular building fronts will be very distorted, as in Fig. 3. This can be readily seen by holding a square card inside an ordinary hemispherical lampshade or by throwing a shadow from any square object into the interior of a round white china bowl. It can easily be traced on to a diagram such as Fig. 1 by ascertaining the horizontal and vertical angle, subtended at the window by different points on an opposing building front; ascertaining, in fact, the celestial latitude and longitude of those points, and marking them upon a flat projection of the hemisphere.

Demarcation of the Apparent Paths of the Sun upon Diagrams of Total Visible Sky.

Upon such a flat projection the paths of the sun in any direction can be readily traced for any day of the year. The latitude of the observer being known, the position of the sun can be obtained from the "Nautical Almanac" for any date and time, and marked upon the skeleton diagrams of celestial latitude and longitude. "Whitaker's Almanack," which gives the sun's declination at any date, will also supply all the information required (Noon altitude (S) = co-latitude $\pm$ declination), and after a little practice the apparent paths for any aspect, as in Figs. 4, 5, and 6, can be traced readily. The writer has found it possible to prepare a diagram similar to Fig. 6 in a country hotel without drawing board or instruments in two hours. It was, of course, very rough and unfinished, but served to determine the point at issue next morning in court.

Facing due east or due west the apparent path is seen on edge at the equinoxes as a straight line from one edge (south) of the diagram to the centre (east or west). From this line the apparent path of the sun across the eastern or western sky upon other dates can be readily set off by adding or deducting the declination. To obtain the apparent paths of any other bearing such as south 30 deg. east, or south-west by south, as in Fig. 6, the eastern or western paths are simply transferred so many degrees to the right or left. The basis of this operation is the axiom that at the same hour of every day the sun has always the same horizontal geographical bearing, a fact which is well known to boy scouts, but which is not always generally recognised now that we have substituted Greenwich mean time and chronometers for solar time and sundials. If it be required to ascertain the exact position of the sun upon any given day and time, the difference between Greenwich mean time and solar time must be allowed for. For instance, on February 21 and October 22 both the noon elevation and the apparent path of the sun are really identical. Yet according to Greenwich time and the almanac the sun rises at 7.7 a.m. and sets at 5.22 p.m. on February 21, and rises at 6.38 a.m. and sets at 4.52 p.m. on October 22. But by consulting "Whitaker" we find that on February 21 Greenwich time is really fourteen minutes fast and on October 22 it is fifteen minutes slow with regard to the sun, which makes the time of rising and setting

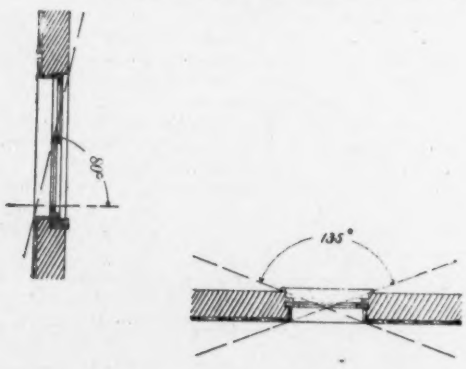


Fig. 2.

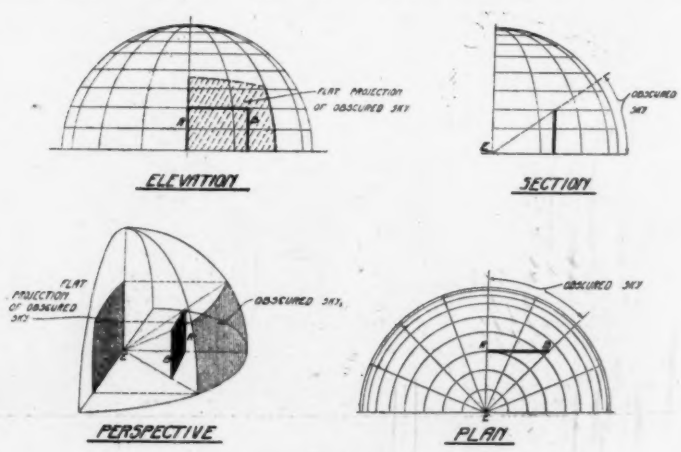


Fig. 3.

6.53 a.m. and 5.7 p.m. by solar time on both dates.

The correct celestial map for the latitude and bearing of a given window being completed, the angular projections of any old and new buildings seen from the window can be readily projected on to the map, and the true loss of sunlight and sky will then be correctly shown.

The result is not always such as one would expect, as will be seen in Fig. 6, which shows that the raising of a building obstructing a ground-floor window facing south-west by south to an angle of 45 deg., by 20 ft. over a length of 80 ft. and by 10 ft. over a further length of 20 ft. will really not cut off as much sun as one would anticipate; not because the raising is either small or distant, but rather because originally an angle of 45 deg. had already shut off all but summer sun in the middle of the day.

Yet after the building was finished the owner of the window affected would almost certainly be convinced that he had lost very much more direct sunlight than was actually the case.

It is most desirable that an expert witness should provide himself with exact sun and sky diagrams before a case comes on, and should supply his client and his client's legal advisers with clear copies in good time. Forewarned is forearmed, and even though such diagrams may not be required for his own case, it is necessary to check, sometimes at a moment's notice, scientific evidence given on the other side.

Guess work and general opinions with regard to the sun are particularly dangerous, especially if there happens to be a yachtsman or anyone else who has studied navigation among the jury or opposing counsel or even in the person of the judge. An expert witness who has made the not uncommon mistake of instructing rather than helping the court and then trips up on a question of solar positions is very apt to bring down with him the whole of his client's case.

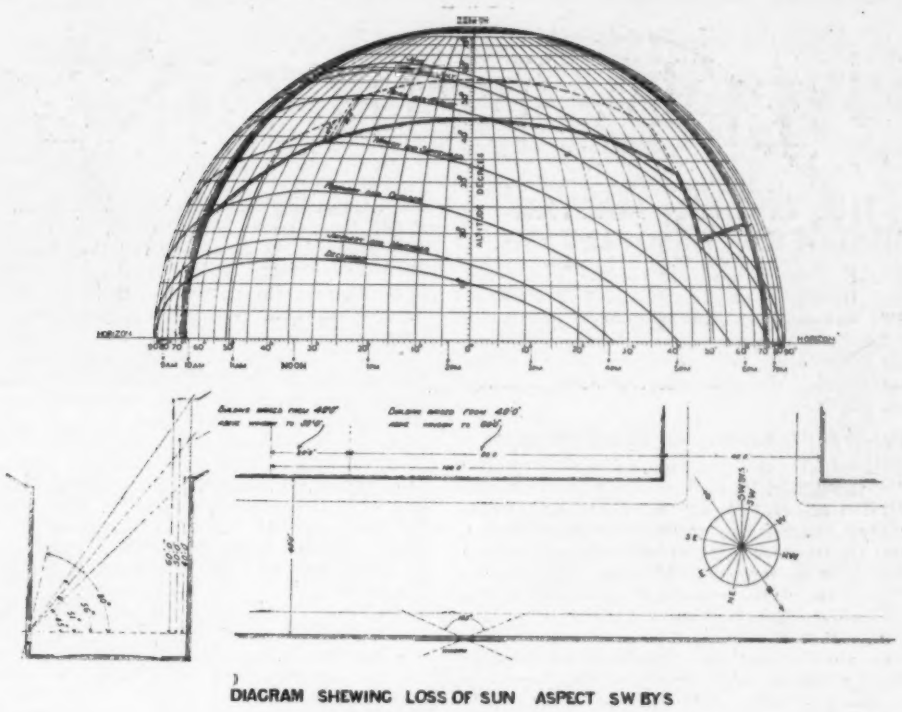


Fig. 6. (*See page* 53.)

REPAIRING AND PATCHING CONCRETE.

WE take the following interesting article from the *Contract Record*, of Toronto, June 16, 1915:—

Wet Method.—The surface of the old concrete is thoroughly roughened, cleaned, and drenched with water, and covered with a cement grout. Then the new concrete is mixed to a sloppy consistency and applied, being held in place till set by forms, as required.

From the reports received, it appears that many successes and many failures have followed this method. Where it has been successful, that result probably has been due to painstaking care and expense having been employed in the preliminary cleaning and thorough wetting of the old concrete surfaces before the new concrete is applied.

Moderately Dry Method.—The surface of the old concrete is thoroughly roughened, cleaned and drenched with water, and powdered with cement or painted with cement grout, after which the new concrete is applied and thoroughly tamped against the old surface. Generally, such patches are kept moist by sprinkling them with water for several days.

The same comment applies here as to the wet method.

Dowel Method.—This is a modification of the two preceeding methods, and is generally used for other than horizontal surfaces, although it may be applied to the latter. The new concrete may have any consistency to meet the particular conditions or the ideas of the engineer in charge; but usually a fairly wet concrete is used. This method includes drilling holes and setting dowels into the old concrete, with projecting ends to engage into the new concrete. Sometimes steel bars or metal fabric are connected to these dowels to further ensure permanency of the pitch.

This method can be made uniformly successful, but cannot be applied always. Where any considerable mass of new concrete is to be connected to old concrete, this is the only safe method to pursue.

Wedge Method.—This method includes the cutting out of defective concrete in such a manner as to undercut the surrounding good concrete, so that the new concrete will be held in place, when set, by the shape of the binding edges of the old concrete.

The difficulty of under-cutting concrete so as to secure such edges is too great to make this method applicable in ordinary cases; and, except where a considerable depth of new concrete is to be put in, such under-cutting could not be done successfully, as concrete cannot be cut so as to leave sharp, clean edges.

Cleaning with Steam.—This is a method of cleaning the surfaces of old concrete preparatory to putting on a patch of new, or of cleaning the top of a rough concrete floor before applying the "finish coat." The surface of the old concrete is brushed as clean as possible with stiff brushes, and then gone over at least twice with a steam jet. An ordinary piece of ½-in. gas pipe makes a very satisfactory jet nozzle. This short length of pipe is connected to a steam hose so that it can be moved about readily. The steam is supplied by the boilers of the mixer or hoisting engines. The steam will clean and heat the concrete surface, leaving it perfectly dry; so it is important to drench the surface thoroughly with water after cleaning with steam. In cold weather it is found advantageous to use hot water. Immediately after the surface is thoroughly cleaned and drenched the new concrete is applied.

Excellent results have followed the use of this method of cleaning; but it is essential that the surface of the old concrete be thoroughly drenched with water after using the steam jet, otherwise the new concrete will not adhere to the old.

Cleaning with Acid.—This method includes the washing of the surface of the old concrete with a solution of hydrochloric (muriatic) acid (1 part acid to 2 parts water), after which the surface must be washed carefully and thoroughly to remove any free acid.

This is a very commonly applied method of cleaning old concrete surfaces preparatory to placing new concrete against them, and is considered by many the only safe treatment to use, especially in cases where a "finish coat" is to be put on after the concrete base is set.

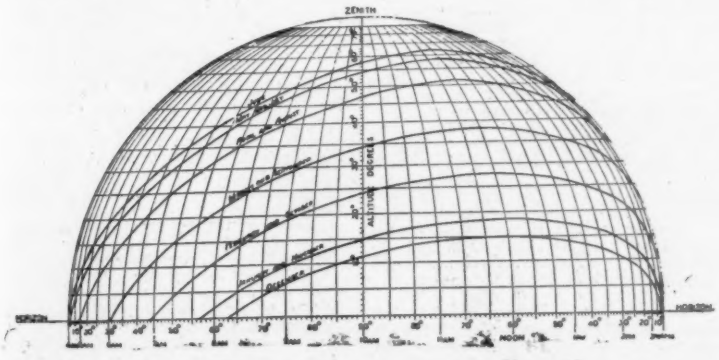


Fig. 5. (*See page* 53.)

BOOKS.

Structural Steel Drafting and Elementary Design. By CHAS. D. CONKLIN, JUN., C.E. (London: Messrs. Chapman & Hall, Ltd., 11, Henrietta-street, W.C. Price 10s. 6d. net.)

THIS book is prepared for the use of the young draughtsman who, on entering an engineering drawing office, requires some information as to the correct methods to be followed in detailing. Many volumes contain a few notes as to the methods of making detail drawings, but the author of this work has endeavoured to cover a wider field, and he has taken a number of typical simple designs which are worked out in detail, and the shop drawings are shown with all the essential points to be considered in their preparation. The matter contained in the book is extensive, and it deals with drawing, designing, estimating, ordering, and detailing, and the details are varied as much as possible. Beams, columns, riveted connections, lattice girders, roofs, and bridges are amongst the examples illustrated, and many excellent and practical drawings are given. The text is clearly written and very suitable for those who do not possess a large experience, and the book should prove very useful to those who acquire it.

Handrailing for Geometrical Staircases. By W. A. SCOTT. (London: Whittaker & Co., 2, White Hart-street, Paternoster-square, E.C. Price 2s. net.)

THE most difficult tasks that a joiner is called upon to perform are probably the setting out and construction of wreathed strings, and handrails for geometrical staircases, and this little book which deals with the best and simplest methods employed should prove very useful, while the price brings it within the reach of every worker.

Strictly geometrical methods are given in the first place, and any short cuts are given afterwards to ensure the latter being intelligently applied. Rails of various forms are dealt with, including scrolls, and curtail steps and wreathed strings are then explained. The book is illustrated by fifty drawings, and the methods described should prove quite clear to any reader.

THE BUILDING TRADE.

THE LONDON MASTER BUILDERS' ASSOCIATION.

THE Council held the ordinary meeting during the month of June. The Finance Committee held its usual quarterly meeting, and various trade questions of importance have been dealt with by the Standing Committees. We take the following from the June Report :—

Pre-War Contracts and Sub-contractors.

This important question, which was referred to in the last two Reports, has received the careful consideration of the Law and Parliamentary Committee, and has now reached a point that enables the opinion of an eminent Counsel to be quoted, which is as follows :—

Opinion.—"The principles applicable to the matters upon which I am asked to advise are as follows :—

When a contract has been entered into the parties thereto are bound to fulfil its terms unless—

(1) There is an exception or provision in the contract itself which in the circumstances contemplated by that exception or provision exonerates a party from the fulfilment of his obligation.

(2) An Act of Parliament of this Realm enacts that a party shall not, or shall not be bound to, fulfil the contract.

(3) The performance of the contract depends on the existence of a particular subject matter and that subject matter has ceased to exist.

(4) The contract provides for the personal services of a named individual and that personal service has been rendered impossible by the illness or death of that individual.

The contracts mentioned in the case relate to the supply of materials or labour and are of an ordinary business description. The outbreak of war, which has increased the price of materials and the cost of labour, is in no way provided for in the contracts to which my attention is called. In the Emergency Legislation which has been enacted since the outbreak of the war there is no special provision, so far as I am aware, to be found except in the Defence of the Realm (Amendment) No. 2 Act, 1915, sect. 1, subsect. 2. There is no suggestion that the Admiralty or the Army Council have made any requirement, regulation or restriction in any way affecting the question. This Act does not, therefore, apply. Subject to the provision of the statute dealing with Courts (Emergency Powers), England, in the High Court and in the County Courts, the rights and liabilities of the parties to an ordinary business contract are not now affected. The Courts (Emergency) Powers Acts only deal with the enforcing of judgments when obtained. In other words, the court has some discretion in enforcing a judgment of the court in execution, but this pre-supposes that a party to a contract is liable to fulfil the obligations of the contract (see 4 and 5 Geo. V., Cap. 78). This statute gives a discretion to the court to stay execution if the firm liable to make the payment is unable to pay owing to circumstances attributable either directly or indirectly to the war. Whether the court will, or will not, exercise its powers depends upon the circumstances of each case, and of course cannot be dealt with in the case submitted to me, or by me; but I think it well to call attention to this enactment, as it should be taken into consideration when dealing with any particular sub-contractor. There are no facts set out in the case which show that the subject matter of the contract is of such nature that it has become impossible to fulfil it. I think, therefore, that the sub-contractors are under the ordinary obligations to fulfil the bargains made. The head contractor is probably liable also to his employers."

Roll of Honour.

The following additional names have been received :—Aldous, G. J., "Artists"; Doxatt-Pratt, C. H., Lance-Corporal, 3rd City of London Field Ambulance, 28th Division; Doxatt-Pratt, M., Private, 3rd City of London Field Ambulance, 28th Division; George, E. J., Inns of Court, O.T.C.; Godson, M. W., 2nd Lieut., 7th County of London; Godson, S. G., Corporal, 24th County of London; Holloway, Sydney J., Second-Lieut. Queen Victoria Rifles; Holloway, Bernard H., Captain, 9th Battalion Royal Sussex Regiment; Holloway, Norman J., Lieut., 18th (Service) Battalion Royal Fusiliers; Snow, Humphrey W., Captain, Royal West Kent Regiment A.A. and Q.M.G., 15th Division, Aldershot; Thorne, Fred., Lieut., 1st Battalion 20th London Regiment; Trollope, Colonel George Haward, V.D., D.L., Hon. Colonel, Queen's Westminster Rifles; Trollope, Clifford C., Lieut., 2nd Battalion Queen's Westminster Rifles (Brigade Transport Officer); Trollope, C. I., Lieut., 2nd Battalion Queen's Westminster Rifles; Trollope, P. G. H., Rifleman, Queen's Westminster Rifles (Invalided); Trollope, C., Private, London Scottish; Trollope, R. J., Lieut., 5th London Brigade, R.F.A., 2nd London Division (T. F.); Walton, Frank F. G., 9th County of London (T. F.); Walton, Leslie S., 9th County of London (T. F.); Williams, H. J., 1st Battalion Rifle Brigade.

We regret to report that Mr. G. I. Neal, H.A.C., whose name appeared in the previous roll, has been killed in action in France.

PROPOSED NEW BUILDINGS AND OTHER WORKS.*

IN these lists care is taken to ensure the accuracy of the information given, but it may occasionally happen that, owing to building owners taking the responsibility of commencing work before plans are finally approved by the local authorities, "proposed" works, at the time of publication, have been actually commenced. Abbreviations :—T.C. for Town Council; U.D.C. for Urban District Council; R.D.C. for Rural District Council; E.C. for Education Committee; L.G.B. for Local Government Board; B.G. for Board of Guardians; L.C.C. for London County Council; B.C. for Borough Council; and P.C. for Parish Council.

ACTON.—The Works Committee adopted a recommendation of the Sub-sewerage Committee that Sir A. R. Binnie be instructed to prepare the necessary plans for the northern relief sewer.

Banff.—Picture house for the Banff Picture House Syndicate.

Beverley.—A L.G.B. inquiry has been held into the application of the R.D.C. to borrow £12,000 for sewerage works for the townships of Brantingham and Elloughton.

Bishop's Stortford.—The Essex C.C. have decided that the road from Bishop's Stortford to Haverhill be reconstructed, so as to enable it to carry military traffic, at an approximate total cost of £7,000, on condition that 75 per cent. of the capital outlay be paid by the War Office and the Road Board.

Black Notley.—The Essex C.C. have approved of the plans for the alteration and enlargement of the sanatorium, at a cost of £2,182 13s. 8d.

Boston.—The T.C. have passed plans for rebuilding a warehouse in Strait Bargate for Mr. W. T. Small, and for additions to a house in Tawney-street, for Mr. G. Pinches.

Braintree.—Plans passed by U.D.C. :—Alterations to premises of Messrs. Aldiss Bros., High-street; alterations at Messrs. West and Son's brush factory; and six new cottages, for Mr. E. Valentine, at Chapel Hill.

Brechin.—The Dean of Guild Court have passed plans for the conversion of the City-road Church into a picture palace for the Brechin Picture and Variety Company.

Bridge.—Plans for a pair of cottages at Petham for Mr. T. Castle have been approved.

Bromley.—Plans passed by the T.C. :—Mr. P. W. Dashwood, redrainage, Redlands, Chislehurst-road; Mr. F. G. Crickett, additions to first floor, Bromley Co-operative Stores, East-street; Mr. E. Peill, bakehouse and stables at rear of No. 32, Bromley-common; Mr. P. Coad, extension to drawing-room, Briarwood, Lodge-road.

Canada.—The Imperial Trade Correspondent at Toronto reports that tenders are invited by the Ontario Government for the right to cut pulpwood on the English River pulp limit. The successful tenderer must agree to erect in the district a completely equipped pulp and paper mill costing at least 1,750,000 dollars (about £359,700). A copy of the conditions of tender may be consulted at the Commercial Intelligence Branch of the Board of Trade, 73, Basinghall-street, London, E.C.

China.—H.M. Consul-General at Shanghai reports that the importation of machinery and the installation of electric lighting apparatus in China is worthy of the closest study by British firms who are interested in the machinery market.

Coventry.—The late Canon Beaumont has left the bulk of his possessions to the vicar of Radford for, or in aid of, stipend, with a provision that all or any part of the trust fund might, with the approval of the bishop of the diocese, be expended upon the enlargement of the church or in the erection of a vicarage house.

Croydon.—Plans passed :—Mr. W. A. Bilney, six houses with shops, Norbury Park Estate; Mr. P. Richardson, twelve houses, Craigen-avenue; Messrs. Chesterton & Sons, one house, Norbury-avenue.

Darlington.—The L.G.B. have held an inquiry into an application by the T.C. for sanction to borrow £34,950 for extensions at the electricity works. Plans approved :—Mr. J. E. Chilton, house in Willow-road, fourteen houses in Cedar-street, two houses in West Auckland-road and Prior-street, and two houses in West Auckland-road; Mr. A. E. Earnshaw, two houses in Trinity-road; Messrs. Kellett & Clayton, house and shop in Neasham-road.

Darwen.—Eight cottage homes at Sunnyhurst, for the Lightbown Trustees; extension to the offices at Hollins Mill for the Wallpaper Manufacturers, Ltd.

Denholme.—The R.D.C. have passed the Yeadon Dyeing Company's plan for extension to petrol store at Foreside.

Derbyshire. — The Derbyshire C.C. have decided to apply to the L.G.B. for their sanction to the following loans :—Morton Hospital, extensions, £5,200; Dronfield Hospital, extensions, £3,850; Mastin Moor Hospital, extensions, £3,850; Langwith Hospital, extensions, £3,850.

Dublin.—Mr. P. C. Cowan, Chief Engineering Inspector, L.G.B., has held an inquiry into petitions presented by the Corporation, praying for Provisional Orders confirming improvement schemes in the city. The areas concerned were :—(1) Crabbe-lane, (2) Boyne-street, (3) widening and improving Lower Liffey-street; and the amounts of the loans required were :—(1) £39,350, (2) £22,075, and (3) £6,000.

Dudley.—It has been decided by the T.C. to purchase 55 acres of land from Lord Dudley, at a cost of £14,000 for the purpose of a housing scheme.

Dunfermline.—The School Board have decided to intimate to the Education Department that they intend to proceed with the erection of a school at Rosyth.

Durham.—A plan for stables and pigstye at Diamond-terrace for Mr. C. D. Dixon-Johnson has been approved by the T.C.

Friern Barnet.—Plans have been approved by the R.D.C. of a billiard-room on the east side of the sixteenth house of Mr. Collins's estate, Friern-lane, for Mr. J. D. King; cottage, Friern-lane, for Mr Sydney Simmons, J.P.; workshop at 24, The Crescent, for Mr. A. J. Angwin; and additions at the Railway Hotel.

Godstone.—The R.D.C. have decided to make a special application to the L.G.B. for sanction to raise £455 for land for sewage disposal works.

Hendon.—Plans passed by the R.D.C. :—Alterations and additions to West Lodge, Pinner, for Mrs. E. Clarke; two villas in Hide-road, Pinner, for Mr. A. Cutler; drainage plans of thirteen houses in Somerset-road, Pinner, for Mr. C. Westcott; stable and coach-house at 9, Cecil-park, Pinner, for Mr. E. T. Daley; cart and stores shed, Gas Works, Great Stanmore.

Hetton.—Plans passed by the U.D.C. :—Three houses in Wear-street, for Mr. Logan; cart sheds in Derwent-street, for Mr. J. Robbins. A plan of proposed street and twelve houses for Mr. J. J. Storey is before the Council.

Heysham.—Mr. C. Beanland, two bungalows in Heysham-road; Mr. T. Gray, villa, St. John's-grove.

Hinckley.—House, Upper Bond-street, for Messrs. Bloxham & Farmer; two store sheds, Factory-road, for Messrs. J. Wright & Son; cotton shed, Baptist-walks, for Messrs. Hood & Mason; factory, Station-road, for Messrs. Bennett & Co.

Houghton.—The U.D.C. has approved the plan of premises proposed to be erected by Messrs. Barclay & Co. in Newbottle-street.

Huntingdon.—In view of the Portholme Company extending their works and employing more men, the T.C. have decided to ask the L.G.B. to sanction a housing scheme. It is suggested that forty houses be erected at an approximate cost of £10,000.

Lancaster.—A L.G.B. inquiry has been held into a proposal by the T.C. to lease to the Harrison Patent Knitting Company a portion of marsh land, and to give them the option of purchase, for the purpose of erecting works.

Langley.—An application has been made to the Charity Commissioners for their sanction of the sale of the St. John's Mission Church, Tat Bank-road, Langley, with the site. The site is required for the extension of a Government factory in the district, and the net proceeds of the sale of the church will be applied by the trustees in erecting a new church on a piece of land in Darly-road, Langley, the site being given by Messrs. Chances, who have acquired the existing building.

Malmesbury.—The Justices have approved of plans of proposed alterations at the Rattlebones Inn, Sherston, in the occupation of Mr. Goulding, submitted by Mr. Downing, secretary of the Stroud Brewery Company, Ltd.; and also of plans of proposed alterations to the Old Royal Ship Inn, Luckington.

Manchester.—A proposal to borrow £424,000 for the establishment of an electricity generating station at Barton has been approved by the T.C.

Moira.—Plans have been passed by the R.D.C. for new offices at the Marquis Colliery.

Molesey. — The Thames Conservancy has decided to construct a new lock for small craft.

* See also our list of Competitions, Contracts, etc., on page 58.

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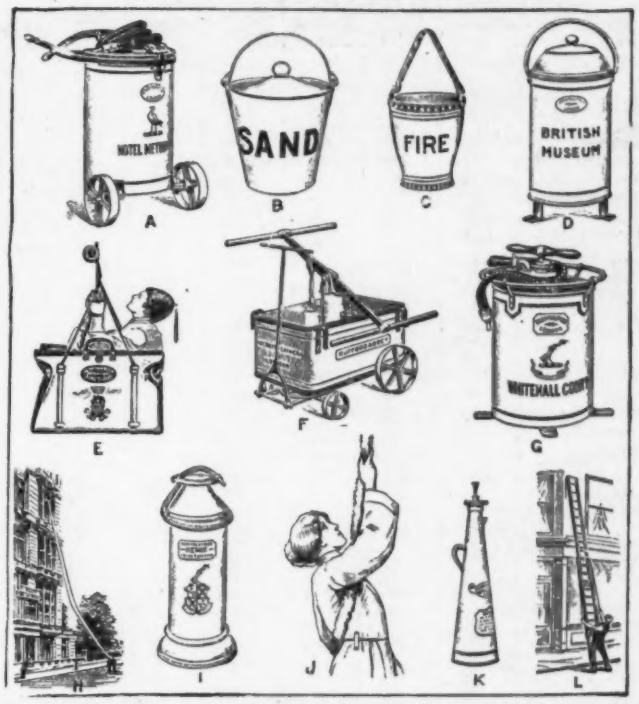

(A) Corridor Hand Pump. (B) Fibre Bucket for Sand. (C) Leather Fire Bucket. (D) Brigade Hand Fire Pump. (E) "Kitbag" Fire Escape. (F) "Universal" Manual Fire Engine. (G) Double Power Hand Fire Pump. (H) "Chute" Fire Escape. (I) Hand "Kemik" Fire Engine. (J) Fluffy Rope Fire Escape. (K) "Taper Top" Chemical Fire Extinctor. (L) Portable Extension Ladder.

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RATES OF WAGES IN THE BUILDING TRADE.

THE following are the present rates of wages in the Building Trade in the principal towns of England and Wales. It must be understood that, while every endeavour is made to ensure accuracy, we cannot be responsible for errors that *may* occur :—

——	Masons.	Brick-layers.	Car-penters, Joiners.	Plas-terers.	Slaters.	Plum-bers.	Painters.	Masons' La-bourers.	Brick-layers' La-bourers.	Plas-terers' La-bourers.
	d.	d.	d.	d.	d.	d.	d.	d.	d.	d.
Aberdare	9	—	9½	9½	—	9	8	6½	6½	6½
Accrington	10	9½	9½	9½	9	9	9½	6½	6½	6½
Altrincham	9½	10	10½	10	8½	10	9	6½	6½	6½
Ashton-under-Lyne	10½	10½	10	10½	9	10	9	6	6	7
Barnsley	9½	9½	9½	9½	9	9	8½	7	7	7
Barrow-in-Furness..	9½	10	9½	9½	9½	9½	9½	7	7	7
Barry	9½	9½	9½	10	—	9	8½	6½	6½	6½
Bath	8½	8½	8½	8	7½	8	7½	6	6	6
Bedford	8	8	8	8½	8	9	6½	5	5	5½
Birkenhead	11	11	11	11½	11	11	9½	7	7	7
Birmingham	11	11	11	11	10½	11½	9½	8	8	8
Bishop Auckland	9	9	9	9	10	9	7½	6	6	6½
Blackburn	10	10½	10	10	9½	10	9½	6½	7½	7½
Blackpool	10½	9½	9½	9½	8½	9	8½	6	6	6
Bolton	10	10½	10	10½	10	10	9½	6–7	6–7	6–7
Bournemouth	8½	8½	8½	8½	8½	8½	8	6	6	6
Bradford	10	10	9½	9½	9½	10	8½	7	7	7
Bridgwater	6½	6½	6½	6½	6½	6½	6	4	4	4
Brighton	9	8½	8½	8½	—	8	7	6	6	6
Bristol	10½	10½	10½	10½	—	10½	9½	7½	7½	7½
Burnley	10	9½	9½	9½	8	9	9½	7	7	7½
Burton-on-Trent	9	9	9	9½	9	9	8½	6½	6½	6½
Bury	10½	10½	10	9	9½	10	9	6	6	6
Cambridge	9½	9	9	9½	9½	9½	7½	6	6	6
Canterbury	8½	8	8	10	—	8½–9	7	5	5	5
Cardiff	10	10	10	10	10	10	9	7	7	7
Chatham	8	9	9	9	9	9	7½	6	6	6
Chelmsford	8	7½	8½	9	—	7½	6½	5	5	6½
Cheltenham	8½	8½	8½	8½	—	8½	8½	6	6	6
Chester	9½	10	9½	9½	9½	9½	8½	5½	6½–6½	5–5½
Chesterfield	9	9	9	8	9	8½	8½	5½	5½	5½
Colchester	8	8½	8½	9	8	9	6	5½	5½	5½
Coventry	10½	10½	10½	10½	9½	10½	9½	7½	7½	7½
Crewe	7	8	7½	9	8	8	7½	5	5½	6
Darlington	9½	9½	9½	10	10	9	8½	6½	6½	6½
Derby	9½	9½	9	9	9	9	8	6½	6½	7
Doncaster	9½	9½	9	9	9	9	8	6½	6½	7
Dudley	8½	8½	9	8½	8½	8	7½	5½	5½	6
Durham	9	9	9½	9	10	9	8½	6	6	6½
East Glamorgan and Monmouthshire Valleys	9½	9½	9½	9½	—	—	8½	6½	6½	6½
Exeter	8	8½	8	8½	7½	7½	7	5½	5½	5½
Folkestone	8½	8½	8½	9	8½	8½	7–7½	6½	6½	6½
Gloucester	8	8½	8½	8	8	8½	8	5½	5½	5½
Grantham	8	8	7½	7½–8	7½–8	7	6½	5	5	5
Grays	—	10	10	—	—	9½	8½	7	7	7
Grimsby	9	9	9	9½	9	8	8½	7	7	7
Great Yarmouth	8	8	8	—	8	8	6½	5	5	—
Halifax	10	10	9	8½	8½	9	8½	7	7	7
Harrogate	9½	9½	9	9	8	9	8½	6½	6½	6½
Hartlepools	9	10	9½	10	10	10	9	7	7	7½
Hastings	8½	8	8	8½	8	8	7	6½	5½	6½
Hereford	8	8	7½	8½	8	7	7	5½	5½	5½
Huddersfield	10	9½	9½	9½	10	9	8½	7	7	7
Hull	10½	10	10	10	10	10	8½	7½	7½	7½
Ipswich	8½	8½	8½	9	9	8½	7	5½	5½	5½
Lancaster	10	10	9	9	9	9	9	5½	6	6
Leamington Spa	9	9	9	8½	9	9	8	6	6	6
Leeds	10	10	10	10	9	10	8½	7½	7½	7½
Leicester	9½	9½	10	10½	10	9½	9	7	7	7½
Lincoln	9	8½	8½	9	8½	8½	8	6	5½	6½
Liverpool	11	11	11	11	10½	11	9½	7	7	7
Llanelly	9½	9½	9½	8½	9	8½	8	5½	5½	5½
London	11½	11½	11½	11½	—	1s.	9	8	8	8
Loughborough	9	8½	8½	9	9	8½	7½	5½	5½	6½
Luton	9½	8½	8½	8½	9	8½	7½	5½	5½	5½
Maidstone	9	9	9	9	9	9	8	6	6	6
Manchester	10	10½	10½	11	10	10	9½	6½	6½	7½
Mansfield	8½	9	8½	8½	—	8½	8	6	6	—
Merthyr Tydfil	9½	9½	9½	9½	8½	9	8	6½	6½	6½
Middlesbrough	9	10	9½	10	10	10	8½	7	7	7½
Newcastle-on-Tyne	10½	10½	10½	10½	10	10	9	7½	7½	7½
Newport, Mon.	10	10	10	10	8½	10	9	7	7	7
Northampton	9	9	9	9	8½	9	8	6	6	6
Norwich	8	8½	8½	8½	8	8½	7½	6	6	6
Nottingham	10	10	10	10½	9½	10	9	7½	7½	8
Oldham	10½	10½	10½	10	9	10	9½	7	7	7½
Oxford	9½	9	9	9	8	9	8	6½	6½	6½
Plymouth	9	9	9	9	9	9	8	6½	6½	6½
Pontypridd	9½	9	9	9½	9	9	8	6½	6½	6½
Portsmouth	9½	9½	9½	9½	—	8½	7½	7	7	7
Preston	10½	10½	10	9½	9½	10	9½	5½	6	6½
Reading	8½	9	9	9½	—	9	7½	6	6	6
Rochdale	10½	10½	10	10	8½	9½	9	7	7	7½
Rochester	8	9	9	9	9	8½	7½	6	6	6
Rugby	9½	9½	9½	9½	8	9½	8½	6	6	6
St. Albans	9	9	9	9–10	9	9–10	8	6½	6	6½
St. Helens	9	9½	10	9½	9½	9½	9½	6	6	6
Scarborough	9	9½	9	8½	8	9	8	7	7	7
Sheffield	10½	9½	9½	9½	9½	9½	8½	6½	6½	6½
Shrewsbury	8½	8½	8½	9½	—	8½	7	5½	5½	5½
Southampton	8½	9½	9½	8½	—	9½	8½	6½	6½	6½
Southend-on-Sea	9	9	9	9	P'cework	9	7	6	6	6
Southport	10	10	9½	9½	9½	9½	9½	6½	7	6½
South Shields	10½	10½	10½	10½	10	8½	9	7½	7½	7½
Stockport	10½	10	10	10½	9	10	8½	6	6½–7	7½
Stockton-on-Tees	9	10	9½	10	10	10	9	7	7	7½
Stoke-on-Trent	9	9½	9	9	—	8½	8½	6	6	—
Stroud	7½	7½	7½	7½	7½	7½	7	5	5	5
Sunderland	10	10½	10	10	10	9	9	6½	6½	7
Swansea	9½	9½	9½	9½	8½	9	9	6½	6½	6½
Taunton	7	7	7	7	—	6	6½	4½	4½	4½
Torquay	8	8	8	8	8	8	8	6	6	6
Wakefield	9½	9½	9	9½	8½	9	8	7	7	7
Walsall	9½	9	9	9	8½	9	8	6½	6½	6½
Warrington	8½	9½	9½	10	8½	9½	8½	5½–6	6	6–6½
West Bromwich	10	10	9½	10½	—	9	8	7	7	7
Wigan	10	10½	9½	9½	9	9½	9½	7	7	7
Windsor	9	9	9	10	—	9	—	6	6	6
Wolverhampton	9½	9½	9½	10	8	10	8	6½	6½	6½
Worcester	8½	9	9	9	9	9	7½	6	6	6
York	9½	9½	9	9½	9½	9	8½	7	7	7

The mason's rate given is for bankers; fixers usually ½d. per hour extra.

Northampton.—Extension of factory, St. Michael's-road, Mr. H. Harris; house, Cedar-road, Mr. T. Wilson; electric light sub-station, Perry-street, Messrs. Crockett & Jones; house, Ardington-road, Mr. J. T. Barton; cloakroom at the Malting, West Bridge, Messrs. T. Manning & Co.; alterations at 38 and 40, Gold-street, Messrs. F. W. Woolworth & Co., Ltd.; house, Harlestone-road, for Mr. J. Merryman; alterations at the "Earl Spencer's Arms," Lower Harding-street, and additions to the "Prince of Wales," Harborough-road, for Messrs. P. Phipps & Co., Ltd.

Peterborough.—A L.G.B. inquiry has been held into the application of the R.D.C. for sanction to borrow a further sum of £5,300 for the purpose of sewerage and sewage disposal in Peterborough Without Walton, and Werrington.

Pontefract.—Plans passed by T.C. :—Wholesale Co-operative Society, alterations to premises in Southgate; Messrs. Ewbank, premises in Slutwell-lane.

Quorndon.—Plans for extensions to existing sheds at Messrs. Wright's works have been passed by the U.D.C.

St. Helens.—Five houses in Derbyshire Hill-road, for Messrs. G. & G. Collins.

Scarborough.—The amount required for making good the damage to All Saints' Church caused by a German shell (£900) is now in hand.

Swindon.—Plans passed :—Messrs. Bishop & Fisher (or Usher's Wiltshire Brewery, Ltd.), alterations, Royal Oak Inn, Devizes-road; Mr. A. Balch, additions, 8, Bath-road; Mr. C. Wilkins, bicycle shed, rear of 15, Linslade-street; Mr. R. J. Beswick (for Messrs. Compton Bros.), pressing room at sewing factory, Sheppard-street; Mr. W. R. Bird, shed, rear of 125, Goddard-avenue; Electricity Department, pillar, Manchester-road footpath, near Wellington-street; Mr. J. Lay, cellarage, 8, High-street; Mr. E. H. Bradley, block plan of sixteen houses, Wroughton-road. The T.C. have approved an amended scheme for the sewage works at Rodbourne, estimated to cost £23,000, and will ask the L.G.B. for their consent to borrow the money.

Tadcaster.—Plans have been passed by the R.D.C. for the erection of property for Mr. Wilson, at Brigshaw, Allerton Bywater, and for the extension of the Allerton Bywater Church Institute.

Wellingborough.—The Northamptonshire C.C. are to ask the consent of the L.G.B. for the raising of £7,500 to defray the cost of the erection of a Central Institute of Boot and Shoe Manufacture.

Westminster.—The C.C. have decided to repave Coventry-street, Cranbourn-street, Leicester-square (north side), and New Coventry-street, with wood blocks, at a cost of £5,467. It has been decided that the Chapel of St. George and the English Martyrs in Westminster Cathedral shall be dedicated to the everlasting memory of officers who fall in the war. The decoration of the chapel is to be carried out in marble and mosaic in the style followed in the adjoining Chapel of Holy Souls, and simple memorial tablets will record the names of the officers who are killed in action, together with their regiments and the dates of their death. Work is also to be started at the Cathedral on the great tympanum of the entrance, the only important feature outside the building which now remains to be finished.

Wigan.—The T.C. have modified their conditions with respect to the building line for the proposed playhouse and picturedrome in King-street, of which Mr. W. Ellis is the architect.

York.—Plans passed :—Mr. C. Martin, three houses, Chestnut-avenue; Messrs. De Burgh Bros., two sheds, Chestnut-avenue; Messrs. Munter & Smallpage, extensions, Goodramgate; Mr. H. M. Coughlin, four houses, Aldreth-grove, Bishopthorpe-road.

GENERAL BUILDING NEWS.

R.C. CHURCH, WARRINGTON.

The new church of St. Benedict, in Orford-lane, Warrington, was opened recently. The building, which is connected with the adjoining presbytery, consists of a nave 70 ft. long and 40 ft. wide, with passage aisles, a sanctuary, a Lady chapel, and a chapel of the Blessed Sacrament; three confessionals, a baptistry, choir gallery, narthex (or portico), and two porches. In addition there are a priests' sacristy, boys' sacristy, and working sacristy, under which are a heating chamber and storage rooms. The church, which has cost about £6,000, will accommodate 600 worshippers. The architect is Mr. Matthew Honan, A.R.I.B.A., of Liverpool, and the contractor is Mr. James Pilkington, of Rainford.

SCHOOL, BLACKWOOD.

An elementary school has recently been erected at Blackwood. The building has accommodation for 350 pupils in the mixed department, and 200 infants in a separate department, and a large open-air classroom has been provided in each department for delicate children. The work was carried out under the supervision of Mr. John Bain, F.R.I.B.A., Architect to the Education Committee, and the cost of the building amounted to £8,174.

SCHOOLS, NEWBIGGIN.

The new County Council schools at Newbiggin have recently been opened. The buildings, which provide accommodation for 738

scholars, have been erected at a cost of £11,551. Mr. Martin Martinson was the architect, and the contractor Mr. Stanley Miller, of Newcastle.

FACTORY, MORELAND-STREET, E.C.

Extensive demolitions of small residential property have been made on both sides of the building occupied by Messrs. Lyne Hancock, indiarubber manufacturers, Moreland-street, Goswell-road, E.C. Additions to the original premises will be made from the designs of Messrs. Mark W. King & Sons, Holborn Viaduct, E.C., the contractors being Messrs. Thomas & Edge, Anglesea-avenue, Woolwich.

BUSINESS PREMISES, CROSS-STREET, E.C.

Business premises are in course of erection in Cross-street, Hatton Garden, E.C. The architect is Mr. H. R. G. S. Smallman, A.R.I.B.A., Queen-street, Cheapside, E.C., and the general contractors are Messrs. Kirk & Kirk, Esher-street, Westminster, S.W.

PUBLIC BATHS, SQUIRES-LANE, FINCHLEY.

These buildings were opened on the 10th inst. Mr. H. W. Wills, F.R.I.B.A., was appointed assessor by the Urban District Council in connection with designs invited from eight architects selected by the Council, and, on his recommendation, the design submitted by Mr. A. W. S. Cross, M.A., F.R.I.B.A., was awarded first place. The Council also appointed Mr. R. I. Tasker as quantity surveyor. The accommodation provided includes a swimming-bath 75 ft. long and 25 ft. wide, and of a depth varying from 3 ft. at the shallow end to 6 ft. at the point where divers enter the water. Fifty-four dressing-boxes are ranged round the longitudinal walls of the bath hall, and suitable appliances for shower-baths, diving, etc., have been installed. In addition there are twelve slipper-baths, divided into two departments for male and female bathers respectively, each department being subdivided into two classes in accordance with the requirements of the Baths and Washhouses Acts. Each class of baths is self-contained or complete in itself, and has its own waiting-room attached. The administrative accommodation includes a central ticket and towel issuing office, adjoining the public entrances from Squires-lane, and immediately behind is a top-lighted inner hall, whence access is obtained to all parts of the establishment used by the public. Other accommodation provided includes a service laundry fitted with the requisite machines and fittings for washing and drying towels; a boiler-house containing boilers, calorifiers, and other fixtures connected with the heating arrangements; various rooms installed with plant for the aeration and filtration of water; and subways for the periodical inspection of all supply and waste pipes. The clerk of works was Mr. F. W. O'Dell, and the builders' representative Mr. Friedlander. All front walls are faced with brindled bricks relieved with dressings of Bath stone, and the roofs are covered with Broseley tiles. Internally, white-glazed tiles have been used freely for wall facings. The amounts of the accepted tenders for the carrying out of the works are as follows:—Messrs. Sharp Brothers, buildings, £5,115, included in which are the following: Messrs. Z. D. Berry & Sons, heating arrangements; Mr. W. H. Lascelles, swimming pond; Aston Construction Company, constructional steelwork and fireproof floors; Messrs. Scarborough Mitchell & Co., electric lighting; Leeds Fireclay Company, slipper-baths and sanitary fittings; Messrs. Fenning & Co., marble paving; The Arts Pavements Company, swimming-bath lining; Messrs. Elsley, Ltd., wrought-iron railings, door furniture, electric-light fittings, etc.; Messrs. Z. D. Berry & Sons, fixing, etc., of Royles' aeration and filtration plant, £679 10s.; Messrs. Sharp Brothers, buildings for housing above plant (estimated), £325; Farringdon Engineering Company, electrolytic plant, £120. The plans provide for the future extension of the building by the addition of a large open-air swimming-bath, 165 ft. in length and 50 ft. in width, arranged on the amphitheatre system, to provide seating accommodation for a large number of spectators when the bath is used for swimming contests or for exhibitions of methods of diving. Clubrooms and additional rooms for administrative purposes are also included in the future extension scheme.

TRADE NEWS.

Under the direction of Mr. Philip Ll. Dykins, architect, Holywell, the "Boyle" system of ventilation (natural), embracing Boyle's latest patent "air-pump" ventilator and latest improved air-inlet brackets, has been applied to a room at Masonic Hall, Holywell, N. Wales.

We have received from the Davis Gas Stove Company, Ltd., 60, Oxford-street, W., a useful little booklet dealing with various types of geysers which this firm have placed on the market. The Davis "Thistle" geyser, which is an "open" type machine, is specially recommended for installing in small villas, flats, or converted houses.

Messrs. John Tann, Ltd., 117, Newgate-street, have had additional testimony during the anti-German riots as to the excellence of their safes; in one instance a jeweller's safe in the East-end was carried out on to the pavement and crashed down upon it without result by the wreckers, who then attempted to open it with hammers and chisels without success. The safe was the "Commercial," and any inferior safe would have been broken up by the treatment to which it was subjected. In another instance a determined attempt was made on a safe supplied to Farrow's Bank by professional burglars, who failed to open it, though they used nitro-glycerine; while the firm hold certificates from explosive makers testifying to failures to break into safes by the use of the most effective means known. We have also particulars before us of Messrs. Tann's crane-hinged bullion-room door, one of which has been recently supplied to the Public Trustees of Queensland at Brisbane, which is said to be the finest door ever imported into Australia, and has given unqualified satisfaction. This door is fitted with a crane hinge clinching arrangement, triple chronometer time lock, and keyless combination lock, and is also fitted with ventilating grilles. Like all of Messrs. Tann's work, it is admirably finished and put together.

We are informed that excellent results have been obtained by the adoption of "Pudlo" waterproofed cement in a pit on Messrs. Holden & Brook's engineering work extension at Gorton, near Manchester.

The Workhouse Hospitals, Barnsley, are being supplied with Shorland's double-fronted patent Manchester stoves with descending smoke flues by Messrs. E. H. Shorland & Brother, Ltd., of Failsworth, Manchester.

The Cherry Tree Machine Company, Ltd., are supplying the new apparatus, including one of their hot blast heaters, for the drying-room at the Chester Royal Infirmary.

NEW COMPANIES.

THE undermentioned particulars of new companies recently registered are taken from the Daily Register compiled by Messrs. Jordan & Sons, Ltd., Company Registration Agents, Chancery-lane, W.C.:—

J. F. & G. HARRIS, LTD. (140,745), 58, Wilson-street, Finsbury, E.C. Registered June 22. To acquire the business now carried on as J. F. & G. Harris, at 58, Wilson-street, Finsbury, E.C., and to enter into an agreement. Also to carry on business of timber merchants, builders, contractors, auctioneers, furnishers, makers and dealers in stone, sand, lime, cement, bricks, gravel, timber, etc. Nominal capital, £16,000 in 13,000 £1 Preference shares, 24,000 2s. 6d. Ordinary shares.

WILLIAM TAYLOR & CO. (HAMMERSMITH), LTD. (140,734), 21, Lower Mall, Hammersmith, W. Registered June 21. To acquire the business of builder and contractor now carried on as William Taylor & Co., at Lower Mall, Hammersmith, and to carry on the business of builder, contractor, dealer in property, merchants, and dealers in stone, sand, lime, bricks, pipes, tiles, terra-cotta, etc. Nominal capital, £50,000 in 50,000 £1 shares.

WESTFIELD BUILDING COMPANY, LTD. (140,788). Registered June 25. To carry on business of builders and general contractors, property repairers, jobbers, plumbers, painters, electrical, mechanical, sanitary, gas and water engineers, manufacturers of artificial stone, bricks, tiles, cement, earthenware, fireplaces, grates, stoves, domestic ironmongery, etc.

THE BUILDERS' BENEVOLENT INSTITUTION.

The sixty-eighth annual general meeting of this useful and well-managed Institution will be held at Koh-i-noor House, Kingsway, at 4 p.m. on Wednesday, July 21, when the President, Mr. George R. Holland, will preside.

THE LONDON COUNTY AND WESTMINSTER BANK.

The directors of the London County and Westminster Bank, Ltd., have declared an interim dividend of 9 per cent. for the half-year ending June 30. The dividend, 9s. per share (less income tax), will be payable on August 3.

PATENTS.

APPLICATIONS PUBLISHED.*

20,116 of 1913.—Reinhold Wallbaum: Process of manufacturing asphalt.
20,665 of 1913.—Louis Wolf: Floor-polishing and like machines.
21,138 of 1913.—Hermann Frank: Apparatus for automatically regulating temperature in rooms or the like.
5,795 of 1914.—Colin Henry Adams: Manhole covers.
6,005 of 1914.—Hermann Stern: Lock with sliding bolt for doors and the like.
6,325 of 1914.—Paul Buerstinghaus: Window latches or fasteners.
6,650 of 1914.—Johannes Schmid: Fastening devices for windows.
6,783 of 1914.—Wilhelm Van den Daele: Manufacture of expanded metal lattice work for use in building construction.
7,061 of 1914.—Arthur Anker: Process and apparatus for slaking mortar materials.
7,073 of 1914.—Clemens Liedhegener: Gully traps and silt boxes therefor.
12,154 of 1914.—Marion Williams Pitner: Process and apparatus for burning gas for heating purposes.
13,177 of 1914.—James Holt: Siphon flushing cisterns.
13,478 of 1914.—Harold Wade (Master Builders' Company): Manufacture of cementitious material for bonding new cement to existing cement or like structures and for other uses.
14,065 of 1914.—Joseph Hewitt: Transparent window-screens, signs, and the like.
14,110 of 1914.—Ulrich Ammann: Road rollers.
14,170 of 1914.—John Shanks: Bath.
14,280 of 1914.—Warren Webster & Co., and Francis Henry Montreuil: Steam-heating systems.
14,293 of 1914.—Isak Räsänen: Heating apparatus.
14,430 of 1914.—Joseph Baerman Strauss: Bascule bridges.
14,559 of 1914.—Douglas Allport: Sliding doors and partitions.
14,688 of 1914.—Arthur Watkinson & Beckett, Laycock & Watkinson, Ltd.: Windows or the like.
15,625 of 1914.—Michael James Whelan: Closet seats and lids.
15,626 of 1914.—Michael James Whelan: Closet seats and lids.
15,627 of 1914.—Michael James Whelan: Closet seats and lids.
15,628 of 1914.—Michael James Whelan: Closet seats.
15,875 of 1914.—Chemische Fabriken Dr. Kurt Albert and Dr. Ludwig Berend: Method of manufacturing phenol aldehyde resins soluble in oil, and varnishes therefrom.
15,916 of 1914.—Moses James Adams: Lavatory basins.
16,547 of 1914.—Roland Mugg and William Foster Fletcher: Painters' or decorators' knives or scrapers.
17,055 of 1914.—John Bowman: Apparatus and means for discharging a specified quantity of liquid from a tank, cistern, or the like.
17,091 of 1914.—Howard Kingwell Skinner: Flushing cisterns.
17,263 of 1914.—John Stratton and Ernest Alexander Claremont: Lead-coated glazing bars.
17,376 of 1914.—Percy Alliott Smithurst: Door-closing and checking mechanism.
17,413 of 1914.—Ludwig Zinsser: Oleaginous filling and absorbent material for use in the manufacture of linoleum, stonewood flooring, and the like, and dynamite.
17,659 of 1914.—George Herbert Westerman: Seat guards for the seats of sanitary closets.
18,262 of 1914.—Henry Crowther: Casement fasteners and the like.
18,893 of 1914.—Charles Frederic Spencer: Urinals.
21,339 of 1914.—Frederick Arthur Bullivant and Trevor Bullivant: Clamping devices for securing together angularly arranged wires, ropes, rods, or the like, at their place of juncture.
22,112 of 1914. Mellowes & Co., Ltd., and Alfred Ernest Rasey: Flushing arrangements in water-closets.
22,211 of 1914.—Frank Jones: Inspection or cleansing openings of sewerage pipes or chambers, interceptors, gulleys, grease and other traps, and the like.
22,372 of 1914.—William Nelson Haden, Charles Ingham Haden, and Francis Herbert Horton: System of hot-water heating.
22,949 of 1914.—David Richard Lewis: Door and the like holders.
679 of 1915.—Charles McWhirter: Hot-water supply cisterns.

* All these applications are in the stage in which opposition to the grant of Patents upon them can be made.

List of Competitions, Contracts, etc.

For some contracts still open, but not included in this List, see previous issues. **Those with an asterisk (*) are advertised in this number:** Competitions, — ; Contracts, iv. ; Public Appointments, — ; Auction Sales, xviii. Certain conditions beyond those given in the following information are imposed in some cases, such as: the advertisers do not bind themselves to accept the lowest or any tender; that a fair wages clause shall be observed; that no allowance will be made for tenders; and that deposits are returned on receipt of a bona-fide tender unless stated to the contrary.

The date given at the commencement of each paragraph is the latest date when the tender, or the names of those willing to submit tenders, may be sent in.

*** It must be understood that the following paragraphs are printed as news, and not as advertisements; and that while every endeavour is made to ensure accuracy, we cannot be responsible for errors that *may* occur.

Competitions.

JULY 27.—**Ireland.**—The Cleansing Committee of the Dublin Corporation invite designs from landscape designers, etc., resident in Ireland for laying out the reclaimed ground at Fairview, Dublin, and for the conversion of same into a public park. Premiums, £50, £10, and £5. Particulars from the Secretary, Cleansing Committee, Dublin Corporation, Lord Edward-street, Dublin

NO DATE.—**Plymouth.**—DESIGNS FOR BUSINESS PREMISES.—The Committee of the Plymouth Mutual Co-operative and Industrial Society, Ltd., invite architects to submit designs for business premises. Premiums, £75, £50, £25.

Contracts.

BUILDING AND PAINTING.

The date given at the commencement of each paragraph is the latest date when the tender, or the names of those willing to submit tenders, may be sent in.

JULY 19.—**Burnopfield.**—HOUSE.—Erection of six-roomed brick house at Crookgate, Burnopfield, for the Co-operative Society, Ltd. Specifications of Mr. J. J. Eltringham, architect, Blackhill.

JULY 19.—**Dorchester.**—PAINTING, ETC.—Painting, limewashing, and repairing at the Dorchester Church of England Schools. Particulars of Mr. H. O. Lock, Secretary to Managers, 24, High West-street, Dorchester.

JULY 19.—**Gillingham.**— PAINTING.—Painting, colour-washing, etc., at the various schools of the Gillingham (Kent) E.C. Specifications of Mr. Andrew Johns, Secretary, Education Office, 4, Gardiner-street, Gilingham.

JULY 19.—**Redhill.**—SHED.—Erection of a tool and potting shed at the Hooley Council School, Redhill. Particulars of the Borough Surveyor, Municipal Buildings, Reigate.

JULY 20.—**Croydon.**—PAINTING, ETC.—External and internal painting and distempering to ward blocks and other buildings at the Borough Hospital, Waddon. Specification of the Borough Engineer, Town Hall, Croydon.

JULY 20.—**Harrogate.**— PAINTING.—For painting at the Isolation Hospital, Thistle Hill, for the Harrogate and Knaresborough Joint Isolation Hospital Committee. Specification of Mr. C. E. Rivers, Borough Engineer, Harrogate.

JULY 20.—**Haverhill.**— SANITARY.— Erection of new offices at Haverhill Council School for the West Suffolk E.C. Specification of Mr. A. A. Hunt, County Architect, 51, Abbeygate-street, Bury St. Edmunds.

JULY 20.— **Rochdale.** — PAINTING. — Painting work required at Spotland Recreation Ground and cemetery. Particulars from Mr. S. S. Platt, Borough Surveyor, Town Hall, Rochdale.

JULY 20.—**Stockport.**—PAINTING, ETC.—Painting and decorating the several schools within the borough. Specification of Mr. John Atkinson, Borough Surveyor, Town Hall, Stockport.

JULY 20.—**Tonyrefail.**—HOTEL.—Erection of hotel at Tonyrefail for the Ely Brewery Company. Quantities of Messrs. A. C. Thomas & G. S. Morgan, architects, Pontypridd. Deposit, £2 2s

JULY 20.—**Worthing.**—PAINTING.—For various painting works for the Corporation. Specifications of the Borough Surveyor.

JULY 22.—**Ebbw Vale.**—PAINTING.—For painting, etc., at sixty-four houses for the U.D.C. Particulars of Mr. T. J. Thomas, Surveyor, Ebbw Vale.

JULY 22.— **Hull.**— BUILDERS' WORKS. — For builders' and ferro-concrete work in connection with the extension of boiler plant at the electricity works. Particulars of Mr. F. W. Bricknell, City Engineer, Guildhall, Hull.

JULY 22.—**Oswestry.**—SHED, ETC.—Erection of a shed, and alterations, repairs, and painting to farm buildings at Ty Ucha. Quantities of Mr. G. William Lacey, Borough Engineer, Guildhall, Oswestry.

JULY 23.—**Dewsbury.**—CHIMNEY.—Erection of a circular brick chimney (160 ft. high above ground level) at Queen's Mills, Dewsbury. Quantities of Messrs. Kirk, Sons, & Ridgway, architects, Market-place, Dewsbury.

JULY 26.—**Cliffe.**—REPAIRS.—Summer repairs at Cliffe Infants' Council School for the Kent E.C. Specification of the Correspondent, Mr. F. Wright, West Court, Cliffe, Rochester.

✱ JULY 26.—**Farningham.**—SUMMER REPAIRS.—The Kent E.C. invite tenders for summer repairs to school.

JULY 26.—**Finchley.**— DECORATIONS.—Internal decorations at workmen's dwellings in Squires-lane and Queen's-road. Specification of the Council's Engineer, Mr. C. J. Jenkin, Council Offices, Church End, Finchley. Deposit, £1.

JULY 26.—**Lewisham.**—REPAIRS.—Execution of summer repairs at the Grenville Park Hostels for the Kent E.C. Specification at the Hostel premises, 31-37, Grenville-park, Lewisham, S.E.

JULY 26.—**Swindon.**—SANATORIA.—Erection of a sanatoria adjoining Gorse Hill Isolation Hospital, for the Wilts C.C. Specifications of Mr. J. G. Powell, County Surveyor, Trowbridge.

JULY 26. — **Warehorne.** — REPAIRS. — Summer repairs to Warehorne Council School for the Kent E.C. Specification of the Correspondent, Mr. W. J. Spicer, Technical Institute, Ashford.

JULY 27.—**Pirbright.**—BRIDGE.—Removal of the bridge over the Basingstoke Canal known as Pirbright Bridge, and for the reconstruction of a new bridge, with concrete abutments and steel decking, for the Guildford R.D.C. Quantities of the Council's Engineer, Mr. John Anstee, District Council Offices, Commercial-road, Guildford. Deposit, £2 2s.

JULY 28.—**Curry Rivel.**—BRIDGE.—Rebuilding of Ham Bridge, on the main road from Curry Rivel to Ilminster, about three miles from Curry Rivel, for the Somerset C.C. Quantities of Mr. Edward Stead, County Surveyor, Wells, Somerset. Deposit, £2 2s.

JULY 30.—**Honiton.**—FOOTBRIDGE.—Erection of footbridge over River Sid, for the Honiton R.D.C. Specification of the Surveyor, High-street, Honiton.

AUGUST 2.—**South Wales.**—REPAIRS, ETC.—For the triennial repairs and materials required at various forts, etc., in South Wales for the War Department. Particulars at the Royal Engineers' Office, Hobbs Point, Pembroke Dock.

AUGUST 9.—**Merthyr Tydfil.**—HOUSES.—Erection of 160 workmen's dwellings, together with the necessary roads and drainage works, at Penydarren, Merthyr Tydfil. Specification of the Borough Architect, Town Hall, Merthyr Tydfil. Deposit, £2 2s.

NO DATE.—**Methley.**—JOINERY.—For the carpenter and joiner's work in the erection of a villa in Pinfold-lane, Methley, for Mr. H. B. Guise. Specification of Mr. Thos. Thompson, junr., surveyor, Red House, Methley.

NO DATE.—**Oswestry.**—PAINTING.—For painting certain of the Cambrian Company's stations between Borth, Dovey Junction, and Towyn. Particulars of the Company's Engineer at Oswestry.

FURNITURE, MATERIALS, etc.

JULY 19.—**Whitehaven.**— MATERIALS.—Supply to the Whitehaven Harbour Commissioners of stores, including iron castings, tools, cement, paint, etc. Forms of tender of Mr. J. Tyson, Clerk, Harbour Offices, Queen's Dock Quay, Whitehaven.

JULY 20. — **Leeds.**— FURNITURE.— Supply of cabinets, lockers, etc., required for the new children's block of the Township Infirmary, Beckett-street, Leeds. Specification of Mr. James H. Ford, Clerk to the Guardians, Poor Law Offices, South-parade, Leeds.

JULY 20.—**Tunbridge Wells.**—ROAD MATERIALS.—Supply to the Corporation of 1,100 tons of granite or hard limestone "chippings" for road tarring, ¾-in. to ¾-in. gauge, screened; also 250 tons of similar chippings, but ¼-in. to ¾-in. gauge. Particulars of the Borough Engineer, Mr. W. H. Maxwell, Town Hall, Tunbridge Wells.

JULY 26.—**Scunthorpe.**—GRANITE.—Supply of 400 tons of broken granite to the U.D.C. Forms of tender of Mr. H. Heap, Surveyor, High-street, Scunthorpe.

AUGUST 25.—**Adelaide.**—MATERIAL.—Supply of various materials to the Postmaster-General's Department in Australia. Specificatons, etc., at the Commonwealth Offices, 72, Victoria-street, London, S.W.

ENGINEERING, IRON, AND STEEL.

JULY 19.—**India.**—MATERIALS.—Supply to the Jodhpur-Bikaner Railway of (*a*) metals, comprising copper, lead, zinc, etc.; (*b*) steel material (plates and bars). Specifications from Messrs. Rendel, Palmer, & Tritton, 13, Dartmouth-street, Westminster, S.W. Charge, 10s. 6d.

JULY 21.—**India.**—RAILWAY PLANT.—Supply to the South Indian Railway Company, Ltd., of (1) rolling stock, steel-covered goods bogie wagons, high-sided bogie wagons, and bogie timber trucks; (2) rolling stock, 50-ft. bogie carriage underframes; (3) carriage fittings, wrought-iron and steel hardware, glass, screws, and sundries. Specifications at the Company's offices, 91, York-street, Westminster, S.W. Charge, £1 for (1) and 10s. for (2) and (3).

JULY 23.—**Manchester.**— RADIATORS.—Supply and fixing of radiators at the institution at Delaunay's-road, Crumpsall, Manchester, for the Manchester Guardians. Particulars of Mr. Hill, the Master, at the institution.

JULY 27.—**India.**—RAILS, ETC.—Supply to the Madras and Southern Mahratta Railway Company, Ltd., of (1) about 107 tons bearing plates for rails; (2) about 65 tons steel screwspikes. Specifications at the offices of the Company, 91, York-street, Westminster, S.W. Charge, £1 1s.

JULY 28.—**India.**—DOGSPIKES.—Supply to the Baroda State Railway of dogspikes. Specifications from Messrs. Rendel, Palmer, & Tritton, 13, Dartmouth-street, Westminster, S.W. Charge, 10s. 6d.

JULY 31.—**Spain.**—HEATING INSTALLATION.—The *Gaceta de Madrid* notifies that tenders will be received at the "Secretaría de la Diputación Provincial," Saragossa, for the installation of a steam heating system in the hospital. The *Gaceta* may be consulted at the Commercial Intelligence Branch of the Board of Trade, 73, Basinghall-street, London, E.C.

ROAD, SANITARY, AND WATER WORKS.

JULY 19.—**Wandsworth.**—STREET WORKS.—Making-up and paving of part of Emsworth-street, Streatham, for the B.C. Specification of the Borough Engineer, Mr. P. Dodd, 56, Easthill, Wandsworth, S.W. Deposit, £5 5s.

JULY 20.—**Cowbridge.**—WATER MAIN.—Laying of 727 yds. of 3-in. cast-iron pipes, etc., for the Cowbridge R.D.C. Quantities of Mr. G. E. Morris, Surveyor, Cowbridge

JULY 21.—**Bedford.**—SEWAGE DISPOSAL.—For sewage disposal works at the Oakley Isolation Hospital, for the Bedford R.D.C. Quantities at the Council Office, 115, High-street, Bedford.

JULY 21.—**Carisbrooke.**—PAVING.—For concrete paving in High-street, Carisbrooke, for the Isle of Wight R.D.C. Particulars of Mr. L. A. Cozens, Surveyor, Newport, I.W.

JULY 21.—**Glennamaddy.**—WELL.—Sinking an artesian well in the town of Glenamaddy and erecting a pump, for the Glenamaddy R.D.C. Specification of Mr. James V. Bruen, Clerk, District Council Office, Union Workhouse, Glennamaddy. Charge, 2s. 6d.

JULY 21.— **Manchester.** — DRAINAGE. — New drainage work at the New Bridge-street Institution, Manchester, for the Guardians. Quantities of Mr. A. J. Murgatroyd, Architect, 23, Strutt-street, Manchester. Deposit, 10s.

JULY 26.—**Westhampnett.**—STEAM ROLLING.—Steam rolling upon the roads throughout the district of the Westhampnett R.D.C during the year ending March 31, 1916. Particulars of Mr. W. D. Rasell, Clerk to the Council, 5, South-street, Chichester.

JULY 28.—**Chippenham.**—WATER MAIN.—Laying 370 yds. of 4-in. cast-iron water main, etc., for the U.D.C. Particulars of Mr. A. E. Adams, Borough Surveyor, Chippenham, Wilts.

Auction Sales.

✱ JULY 21.—**Croydon.**—Mr. H. Butcher will sell by auction, on the premises, the stock of a builder and general ironmonger.

✱ JULY 21. — **Islington.** — Messrs. Douglas Young & Co. will sell by auction, at the Mart, freehold factory sites in Market-road, Islington.

✱ JULY 27.—**Kilburn.**—Messrs. Fuller, Horsey, Sons, & Cassell will sell by auction, on the premises, leasehold building works.

✱ JULY 27.—**Kilburn.**—Messrs. Fuller, Horsey, Sons, & Cassell will sell by auction, on the premises, a builder's plant, stock, and timber.

✱ JULY 27.—**Tottenham Court-road, W.**—Mr. H. W. Smith will sell by auction, at 6, Warren-street, W., the stock of prime, bone-dry, high-class cabinet-mkaers' timber and veneers.

✱ JULY 29.—**Stockwell-road, S.W.**—Mr. H. W. Smith will sell by auction, at yard and works, 36, Stockwell-road, S.W., the stock-in-trade, plant, and rolling stock of a builder and decorator and valuable wood-working machinery

[Those with an asterisk (*) are advertised in this issue.]

PRICES CURRENT OF MATERIALS.

[Owing to the exceptional circumstances which prevail at the present time, prices of materials should be confirmed by inquiry.]

Since our last issue the price of cement has been advanced.

*** Our aim in this list is to give, as far as possible, the *average* prices of materials, not necessarily the highest or lowest. Quality and quantity obviously affect prices—a fact which should be remembered by those who make use of this information.

BRICKS, &c.

Per 1000 Alongside, in River Thames.	£ s. d.
Best Stocks	2 0 0
Picked Stocks for Facings	2 15 0

Per 1000, Delivered at Railway Depôt, London.

	£ s. d.		£ s. d.
Flettons	1 16 0	Best Blue Pressed Staffordshire	3 15 0
Best Fareham Red	3 12 0	Do. Bullnose	4 0 0
Best Red Pressed Ruabon Facing	5 0 0	Best Stourbridge Fire Bricks	4 0 0

GLAZED BRICKS—

Best White, Ivory, and Salt Glazed Stretchers	13 0 0	D'ble Str'tch'rs	18 10 0
		Double Headers	15 10 0
		One Side and two Ends	19 10 0
Headers	12 10 0	Two Sides and one End	20 10 0
Quoins, Bullnose and 4½ in. Flats	16 10 0	Splays and Squints	18 0 0

Second Quality £1 10s. per 1000 less than best.

	s. d.	
Thames and Pit Sand	7 9	per yard, delivered.
Thames Ballast	6 6	,, ,,
Best Portland Cement	44 0	per ton, ,,
Best Ground Blue Lias Lime	21 0	,, ,,

NOTE—The cement or lime is exclusive of the ordinary charge for sacks.

Grey Stone Lime ..... 15s. 6d. per yard delivered.
Stourbridge Fireclay in sacks 35s. 0d. per ton at rly. dpt.

STONE.

Per Ft. Cube.

	s. d.
BATH STONE—delivered on road waggons, Paddington Depôt	1 7½
Do. do. delivered on road waggons, Nine Elms Depôt	1 9½

PORTLAND STONE (20 ft. average)—

Brown Whitbed, delivered on road waggons, Paddington Depôt, Nine Elms Depôt, or Pimlico Wharf	2 6
White Basebed, delivered on road waggons Paddington Depôt, Nine Elms Depôt, or Pimlico Wharf	2 8

Per Ft. Cube, delivered at Railway Depôt.

	s. d.		s. d.
Ancaster in blocks	1 11	Closeburn Red Freestone	2 2
Beer in blocks	1 7	Red Mansfield Freestone	2 6
Greenshill in blocks	2 0	Talacre & Gwespyr Stone	2 6
Darley Dale in blocks	2 6		
Red Corsehill in blocks	2 6		

YORK STONE—*Robin Hood Quality.*

Per Ft. Cube, Delivered at Railway Depôt.	s. d.
Scappled random blocks	2 10

Per Ft. Super., Delivered at Railway Depôt.

6 in. sawn two sides landings to sizes (under 40 ft. super.)	2 8
6 in. rubbed two sides ditto, ditto	2 6
3 in. sawn two sides slabs (random sizes)	0 11½
2 in. to 2½ in. sawn one side slabs (random sizes)	0 7
1½ in. to 2 in. ditto, ditto	0 6

HARD YORK—

Per Ft. Cube, Delivered at Railway Depôt.

Scappled random blocks	3 0

Per Ft. Super., Delivered at Railway Depôt.

6 in. sawn two sides landing to sizes (under 40 ft. super.)	2 8
6 in. rubbed two sides ditto	3 0
2 in. sawn two sides slabs (random sizes)	1 2
8 in. self-faced random flags	0 5

TILES.

	Per 1000 f.o.r. London. £ s. d.
Best machine-made tiles or hand-made sand-faced tiles from either Broseley or Staffordshire district	2 12 6
Ornamental ditto	2 15 0
Hip and valley tiles (per dozen)	0 5 6

SLATES.

	Per 1000 of 1200 f.o.r. London. £ s. d.
Best Blue Bangor slates, 20 by 10	11 5 0
First quality ,, ,,	11 0 0
,, ,, 16 by 8	5 10 0
Best Blue Portmadoc, 20 by 10	11 2 6
First quality ,, ,,	10 12 6
,, ,, 16 by 8	5 10 0

WOOD.

BUILDING WOOD.	At per standard. £ s. d.		£ s. d.
Deals: best 3 in. by 11 in. and 4 in. by 9 in. and 11 in.	21 10 0	..	22 0 0
Deals: best 3 in. by 9 in.	21 0 0	..	22 0 0
2 in. by 11 in.	23 0 0	..	23 10 0
Battens: best 2½ in. by 7 in. and 8 in., and 3 in. by 7 in. and 8 in.	19 10 0	..	20 10 0
Battens: best 2½ in. by 6 in. and 3 in. by 6 in.	0 10 0		less than 7 in. and 8 in.
2 in. by 7 in.	20 0 0	..	—
3 in. by 4 in.	21 0 0	..	—
2 in. by 4½ in.	22 10 0	..	—
3 in. by 4½ in.	21 10 0	..	—

WOOD (*Continued*).

BUILDING WOOD (*Continued*)—	At per standard. £ s. d.		£ s. d.
Deals: seconds	1 0 0		less than best
Battens: seconds	0 10 0		,, ,,
2 in. by 4 in. and 2 in. by 6 in.	18 10 0	..	19 10 0
2 in. by 4½ in. and 2 in. by 5 in.	16 10 0	..	17 0 0
Foreign Sawn Boards—			
1 in. and 1¼ in. by 7 in.	0 10 0		more than battens.
¾ in.	1 0 0		,, ,,
Fir timber: best middling	At per load of 50 ft.		
Memel (average specification)	6 15 0	..	7 15 0
Seconds	6 0 0	..	6 10 0
Small timber (8 in. to 10 in.)	5 5 0	..	5 10 0
Small timber (6 in. to 8 in.)	4 10 0	..	5 0 6
Swedish balks	4 0 0	..	4 10 0
Pitch-pine timber (30 ft. average)	8 5 0	..	9 0 0

JOINERS' WOOD.	At per standard. £ s. d.		£ s. d.
White Sea: first yellow deals, 3 in. by 11 in.	33 15 0	..	35 0 0
Battens, 2½ in. and 3 in. by 7 in.	23 7 6	..	24 7 6
Second yellow deals, 3 in. by 11 in.	27 5 0	..	28 5 0
Do. 3 in. by 9 in.	25 5 0	..	26 5 0
Battens, 2½ in. and 3 in. by 7 in.	20 0 0	..	21 0 0
Third yellow deals, 3 in. by 11 in. and 9 in.	20 2 6	..	21 2 6
Battens, 2½ in. and 3 in. by 7 in.	19 0 0	..	20 0 0
Petrograd: first yellow deals, 3 in. by 11 in.	29 10 0	..	31 0 0
Do. 3 in. by 9 in.	25 5 0	..	26 5 0
Battens	19 5 0	..	20 5 0
Second yellow deals, 3 in. by 11 in.	21 10 0	..	23 0 0
Do. 3 in. by 9 in.	20 15 0	..	21 10 0
Battens	19 10 0	..	20 0 0
Third yellow deals, 3 in. by 11 in. / Do. 3 in. by 9 in.	19 10 0	..	—
Battens	19 0 0	..	19 10 0
White Sea and Petrograd—			
First white deals, 3 in. by 11 in.	22 10 0	..	24 0 0
First white deals, 3 in. by 9 in.	21 0 0	..	22 10 0
Battens	18 10 0	..	19 0 0
Second white deals, 3 in. by 11 in.	20 0 0	..	21 0 0
Second white deals, 3 in. by 9 in.	19 0 0	..	20 0 0
Battens	18 0 0	..	18 10 0
Pitch-pine: deals	34 0 0	..	35 0 0
Under 2 in. thick extra	0 10 0	..	1 0 0
Columbian or Oregon Pine, best quality	28 0 0	..	29 0 0
Yellow Pine—First, regular sizes	57 0 0		upwards.
Oddments	39 0 0		,,
Seconds, regular sizes	43 10 0		,,
Oddments	37 0 0		,,
Kauri Pine—Planks per ft. cube	0 7 6	..	—
Oak Logs—			
Large, per ft. cube	0 5 6	..	0 6 6
Small ,, ,,	0 4 6	..	0 5 5
Wainscot Oak Logs, per ft. cub	0 10 6	..	0 12 6
Dry Wainscot Oak, per ft. super. as inch	0 1 0	..	0 1 3
¾ in. do. do.	0 0 10	..	0 1 0
Dry Mahogany—Honduras, Tabasco, per ft. super, as inch	0 1 0	..	0 1 4
Selected, Figury, per ft. super. as inch	0 1 6	..	0 2 6
Cuba Mahogany	0 1 6	..	0 2 6
Dry Walnut, American, per ft. super. as inch	0 1 0	..	upwards. 0 1 3
French, "Italian," Walnut	0 1 0	..	0 1 6
Teak, per load (Rangoon or Moulmein)	28 0 0	..	34 0 0
Do., do. (Java)	24 0 0	..	27 0 0
American Whitewood planks, per ft. cube	0 6 6	..	0 7 6

Prepared Flooring, etc.—	Per square. £ s. d.		£ s. d.
1 in. by 7 in. yellow, planed and shot	0 18 0	..	1 0 0
1 in. by 7 in. yellow, planed and matched	0 18 0	..	1 0 0
1¼ in. by 7 in. yellow, planed and matched	1 2 0	..	1 5 0
1 in. by 7 in. white, planed and shot	0 17 6	..	1 0 0
1 in. by 7 in. white, planed and matched	0 18 0	..	1 0 0
1¼ in. by 7 in. white, planed and matched	1 2 0	..	1 5 0
¾ in. by 7 in. yellow, matched and beaded or V-jointed boards	0 14 6	..	0 16 6
1 in. by 7 in. ,, ,,	0 18 6	..	1 1 0
¾ in. by 7 in. white ,, ,,	0 14 6	..	0 16 6
1 in. by 7 in. ,, ,,	0 18 6	..	1 1 0

6 in. at 6d. to 9d. per square less than 7 in.

METALS.

JOISTS, GIRDERS, &c.

	In London or delivered Railway Vans, per ton. £ s. d.		£ s. d.
Rolled Steel Joists, ordinary sections	12 10 0	..	13 0 0
Compound Girders, ordinary sections	15 10 0	..	16 0 0
Steel Compound Stanchions	16 0 0	..	17 0 0
Angles, Tees, and Channels, ordinary sections	14 10 0	..	15 0 0
Flitch Plates	14 10 0	..	15 0 0
Cast Iron Columns & Stanchions, including ordinary patterns	11 10 0	..	12 0 0

IRON—	Per ton, in London. £ s. d.		£ s. d.
Common Bars	12 10 0	..	—
Staffordshire Crown Bars, good merchant quality	13 0 0	..	13 10 0
Staffordshire "Marked Bars"	13 10 0	..	14 0 0

METALS (*Continued*).

IRON (*Continued*)—	Per ton, in London. £ s. d.		£ s. d.
Mild Steel Bars	13 0 0	..	14 0 0
Steel Bars, Ferro-Concrete quality, £14 basis price.			
Hoop Iron, basis price	14 0 0	..	—
,, ,, Galvanised	26 10 0	..	—
(* And upwards, according to size and gauge.)			
Sheet Iron Black—			
Ordinary sizes to 20 g.	13 10 0	..	—
,, ,, 24 g.	14 10 0	..	—
,, ,, 26 g.	16 0 0	..	—
Sheet Iron, Galvanised, flat, ordinary quality—			
Ordinary sizes, 6 ft. by 2 ft. to 3 ft. to 20 g.	24 0 0	..	—
Ordinary sizes to 22 g. and 24 g.	25 0 0	..	—
Ordinary sizes to 26 g.	26 0 0	..	—
Sheet Iron, Galvanised, flat, best quality—			
Ordinary sizes to 20 g.	26 0 0	..	—
,, ,, 22 g. and 24 g.	26 10 0	..	—
Ordinary sizes to 26 g.	27 0 0	..	—
Galvanised Corrugated Sheets—			
Ordinary sizes, 6 ft. to 8 ft. 20 g.	24 0 0	..	—
Ordinary sizes, 22 g. and 24 g.	24 10 0	..	—
Ordinary sizes, 26 g.	25 0 0	..	—
Best Soft Steel Sheets, 6 ft. by 2 ft. to 3 ft. to 20 g. and thicker	16 0 0	..	—
Best Soft Steel Sheets, 22 g. & 24 g.	16 10 0	..	—
Best Soft Steel Sheets, 26 g.	18 0 0	..	—
Cut Nails, 3 in. to 6 in.	15 0 0	..	15 10 0
(Under 3 in., usual trade extras.)			

LEAD, &c.

Delivered in London.

LEAD—Sheet, English, 4 lb. and up	£ s. d.		—
	32 0 0	..	
Pipe in coils	32 10 0	..	—
Soil pipe	35 10 0	..	—
Compo pipe	35 10 0	..	—

NOTE—Delivery in country in not less than 5 cwt. lots 1s. per cwt. extra.

COPPER—			
Strong Sheet per lb.	0 1 5	..	—
Thin ,, ,,	0 1 6	..	—
Copper nails ,,	0 1 5	..	—
Copper wire ,,	0 1 5	..	—
BRASS—			
Strong Sheet ,,	0 1 3	..	—
Thin ,,	0 1 4	..	—
TIN—English Ingots ,,	0 1 10	..	—
SOLDER—Plumbers' ,,	0 0 11	..	—
Tinmen's ,,	0 1 2	..	—
Blowpipe ,,	0 1 4	..	—

GLASS.

ENGLISH SHEET GLASS IN CRATES OF STOCK SIZES AND IN SQUARES IN ORDINARY SIZES.

Per Ft. Delivered.

15 oz. thirds	4½d.	26 oz. fourths	5½d.
,, fourths	4½d.	32 oz. thirds	8½d.
21 oz. thirds	5½d.	,, fourths	7d.
,, fourths	5d.	Fluted Sheet, 15 oz.	5½d.
26 oz. thirds	6½d.	,, 21 oz.	6½d.

ENGLISH ROLLED PLATE IN CRATES OF STOCK SIZES.

Per Ft.

⅛ Rolled plate	3d.
⅜ Rough rolled and rough cast plate	3½d.
½ Rough rolled and rough cast plate	4d.
Figured Rolled, Oxford Rolled, Oceanic, Arctic Muffled, and Rolled Cathedral, white	4½d.
Ditto, tinted	6d.
Rolled Sheet	3½d

OILS, &c.

		£ s. d.
Raw Linseed Oil in pipes per gallon		0 2 5
,, ,, ,, in barrels ,,		0 2 6
,, ,, ,, in drums ,,		0 2 9
Boiled ,, ,, in barrels ,,		0 2 8
,, ,, ,, in drums ,,		0 3 0
Turpentine in barrels ,,		0 3 2
,, in drums ,,		0 3 5
Genuine Ground English White Lead, per ton (In not less than 5 cwt. casks.)		37 10 0
Red Lead, Dry	per ton	37 0 0
Best Linseed Oil Putty	per cwt.	0 10 0
Stockholm Tar	per barrel	1 12 0

GENUINE WHITE LEAD PAINT—

Blackfriars, Nine Elms, or Park, etc., brands (in 14 lb. tins), not less than 5 cwt. lots	per cwt. delivered	2 6 0

VARNISHES, &c.

	Per gallon. £ s. d.
Fine Pale Oak Varnish	0 8 0
Pale Copal Oak	0 10 6
Superfine Pale Elastic Oak	0 12 6
Fine Extra Hard Church Oak	0 10 0
Superfine Hard-drying Oak, for seats of Churches	0 14 6
Fine Elastic Carriage	0 12 9
Superfine Pale Elastic Carriage	0 16 0
Fine Pale Maple	0 10 0
Finest Pale Durable Copal	0 18 6
Extra Pale French Oil	1 1 0
Eggshell Flating Varnish	0 18 0
White Plate Enamel	1 4 0
Extra Pale Paper	0 12 0
Best Japan Gold Size	0 10 0
Best Black Japan	0 16 0
Oak and Mahogany Stain	0 9 0
Brunswick Black	0 8 0
Berlin Black	0 16 0
Knotting	0 10 0
French and Brush Polish	0 10 6

[Owing to the exceptional circumstances which prevail at the present time, prices of materials should be confirmed by inquiry.]

TO CORRESPONDENTS.

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All drawings sent to or left at this office for consideration should bear the owner's name and address on either the face or back of the drawing. Delay and inconvenience may result from inattention to this.

Any commission to a contributor to write an article, or to execute or lend a drawing for publication, is given subject to the approval of the article or drawing, when received, by the Editor, who retains the right to reject it if unsatisfactory. The receipt by the author of a proof of an article in type does not necessarily imply its acceptance.

N.B.—Illustrations of the First Premiated Design in any important architectural competition will always be accepted for publication by the Editor, whether they have been formally asked for or not.

TENDERS.

Communications for insertion under this heading should be addressed to "The Editor," and must reach us *not later than* 2 *p.m. on Wednesday.* [N.B.—We cannot publish Tenders unless authenticated either by the architect or the building owner; and we cannot publish announcements of Tenders accepted unless the amount of the Tender is stated, nor any list in which the lowest Tender is under 100*l.* unless in some exceptional cases and for special reasons.]

* Denotes *accepted.* † Denotes *provisionally accepted.*

BALLYMALEY.—For erection of new sanatorium at Ballymaley, Ennis, for the Co. Clare Committee. Mr. W. H. Allen, C.E., Architect:—

T. Baunan & Sons	£2,898 0	W. O'Flaherty	£1,497 0
H. F. C. Nally & Co.	2,500 0	M. Smith, Causeway, Ennis, Co. Clare‡	1,480 5
Enterprise Building Co.	1,591 0		

‡ Accepted for solid 9-in. concrete walls throughout.

CONGLETON.—For painting and decorating of the Jubilee Pavilion, bridges, etc., in the public park. Mr. J. H. Walters, Borough Surveyor, Congleton:—

W. E. Gee	£39 5
F. Highinbotham, West-street, Congleton*	34 0
S. Yoxhall‡	16 0

‡ Not complete.

ELLEN GREEN.—Erection of school, for the Surrey County Council:—
J. Cummins & Son, Dorking* £1,105

GOOLE.—For erection of a shelter and convenience in Hook-road-park, Goole, for the Urban District Council. Mr. J. H. Castle, Engineer and Surveyor, Council Offices, Goole:—

J. W. Tasker	£421 9 5	J. Walker	£385 17 6
H. Featherstone	398 0 0	Kelsey Bros., Burlington-crescent, Goole*	371 0 0
Jackson & Oates	396 0 0		

[Surveyor's estimate, £397.]

KIRKCALDY.—For inside painter work at fever hospital, Dunniker-road, also for removing about 700 cubic yds. of excavation at new sanatorium, for the Corporation:—

Painter Work: D. B. Stenhouse .. £39 19 9
Per cubic yd.
Excavations: G. Smith & Sons 1 2

LARNE.—For erecting a van shed and concrete water-storage tank at the workhouse, for the Guardians. Mr. Wm. Pinkerton, C.E., Point-street, Larne:—
W. A. Owens, Point-street, Larne* £78

LONDON.—The London County Council have accepted the following tenders for various works at their schools:—

Hampstead—Netherwood-street—Enlarging Boiler-room.
Bovis, Ltd. £257 0 0

Wandsworth—Derinton-road—Electric Lighting.
Alpha Manufacturing Co. 357 15 0

Southwark, W.—Webber-street P.D.—Gas Lighting.
South Metropolitan Gas Co. .. 193 10 0

Bethnal Green, N.E.—Wolverley-street—Heating.
J. & F. May 589 0 0

Lewisham—County Secondary School for Girls, Forest Hill—Heating.
T. W. Vaughan & Co. (1914), Ltd. 1,050 10 0

Hackney, S.—Upton House Industrial—Heating.
Palowkar & Sons 158 0 0

Woolwich—Plum-lane—Heating.
F. Davies 230 0 0

Hackney, S.—County Secondary School, South Hackney—Electric Lighting.
Alpha Manufacturing Co. 562 1 0

Islington, S.—Sebbon-street—Electric Lighting.
T. W. Vaughan & Co. (1914), Ltd. 306 4 0

Newington, W.—"John Ruskin"—Air-washing Screens.
Strode & Co., Ltd. 119 0 0

Wood-block Flooring.
Zeta Wood Flooring Co. Prices for additional items.

LONDON.—For the supply and erection of a Lancashire boiler at North Woolwich pumping-station, for the London County Council:—

Spurr, Inman, & Co., Ltd.	£1,100
Galloways, Ltd.	970
Yates & Thom, Ltd.	969
Tetlow Bros.	955
D. Adamson & Co., Ltd.	935
Tinkers, Ltd.	912
Ruston, Proctor, & Co., Ltd.	858
Clayton, Son, & Co., Ltd.	823
Tinker, Shenton, & Co., Ltd., Hyde*	780

SEVERALLS.—Construction of reinforced-concrete tank at Severalls Asylum, for the Essex County Council:—
Myall Bros., Southend* £882

STOCKPORT.—New tramways lay-out, for the Corporation, at St. Petersgate:—
Hadfield's, Ltd.* £205

SWANTON MORLEY.—For school works. List of tenders:—

	Roofs of Corrugated Tiles.	Roofs of Broseley Tiles.	Time in Months.
J. Hurn & Son	£2,487 0 ..	£2,534 0 0 ..	—
Sparkes & Latten	2,400 0 ..	2,460 0 0 ..	10
T. H. Blyth & Sons	2,365 0 ..	2,423 0 0 ..	—
E. J. Smith	2,130 0 ..	2,206 0 0 ..	9
R. Shanks	2,071 0 ..	2,142 0 0 ..	8
W. & J. Larner	2,025 0 ..	2,082 0 0 ..	11
J. Springall & Son, Swanton, Morley†	1,995 0 ..	2,075 0 0 ..	9
Tash & Langley	1,987 0 ..	2,077 6 6 ..	—
Neal Bros.‡	1,854 0 ..	1,923 15 0 ..	—

‡ Withdrawn on account of time.

TATTERSHALL (Lincs.).—For the construction of a sewer, with manhole and gully, and a settling tank, at Tattershall, for the Horncastle Rural District Council. Quantities by Mr. J. H. Holmes, Surveyor, Wragby:—
C. Hensman & Son, Horncastle* .. £39 17 6

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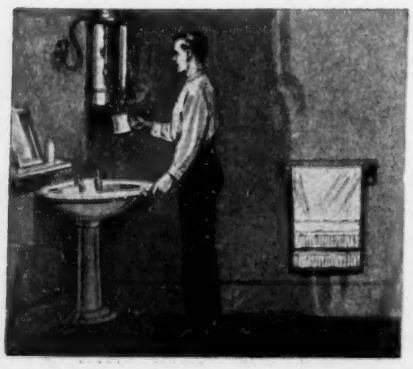
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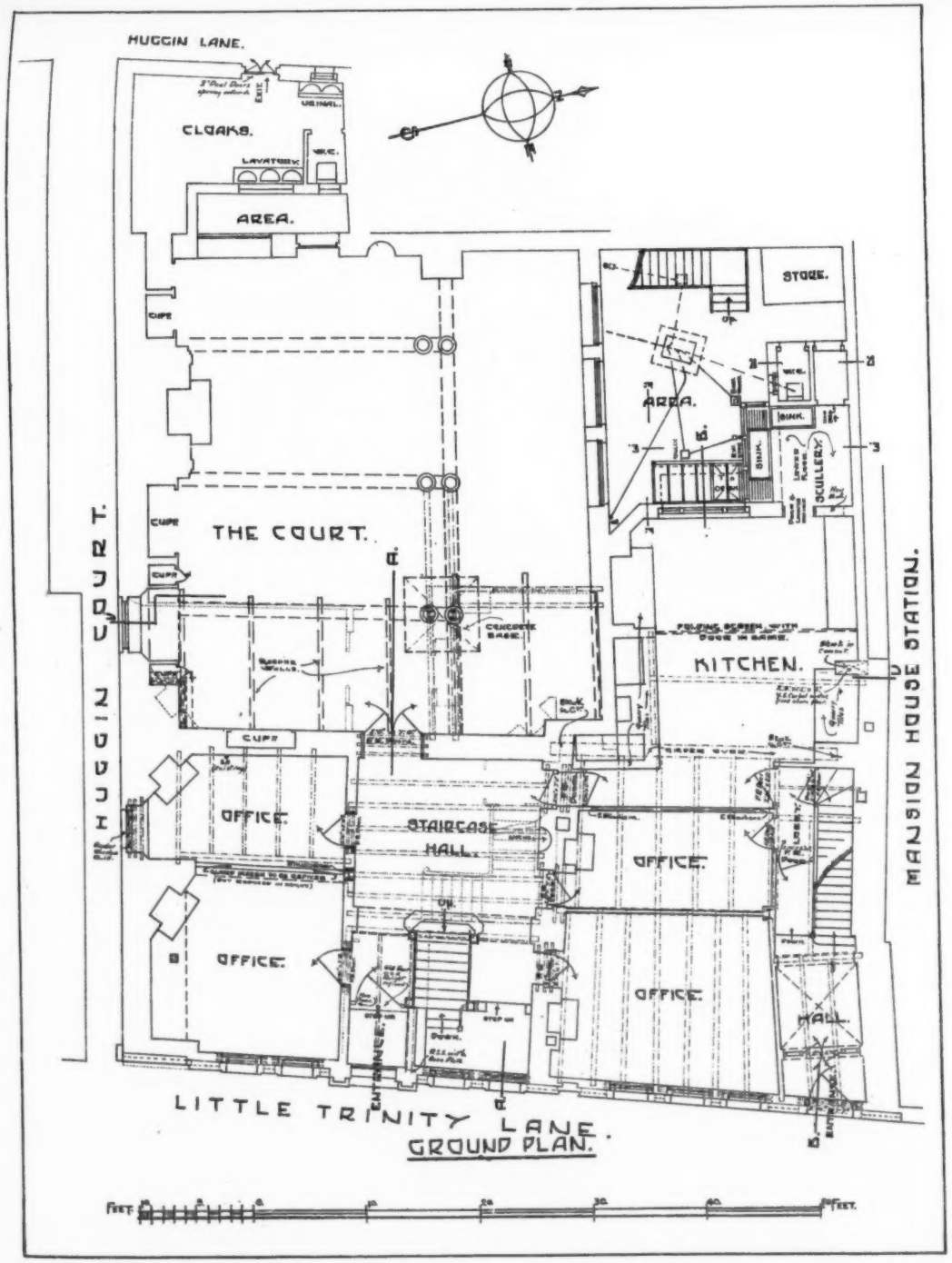

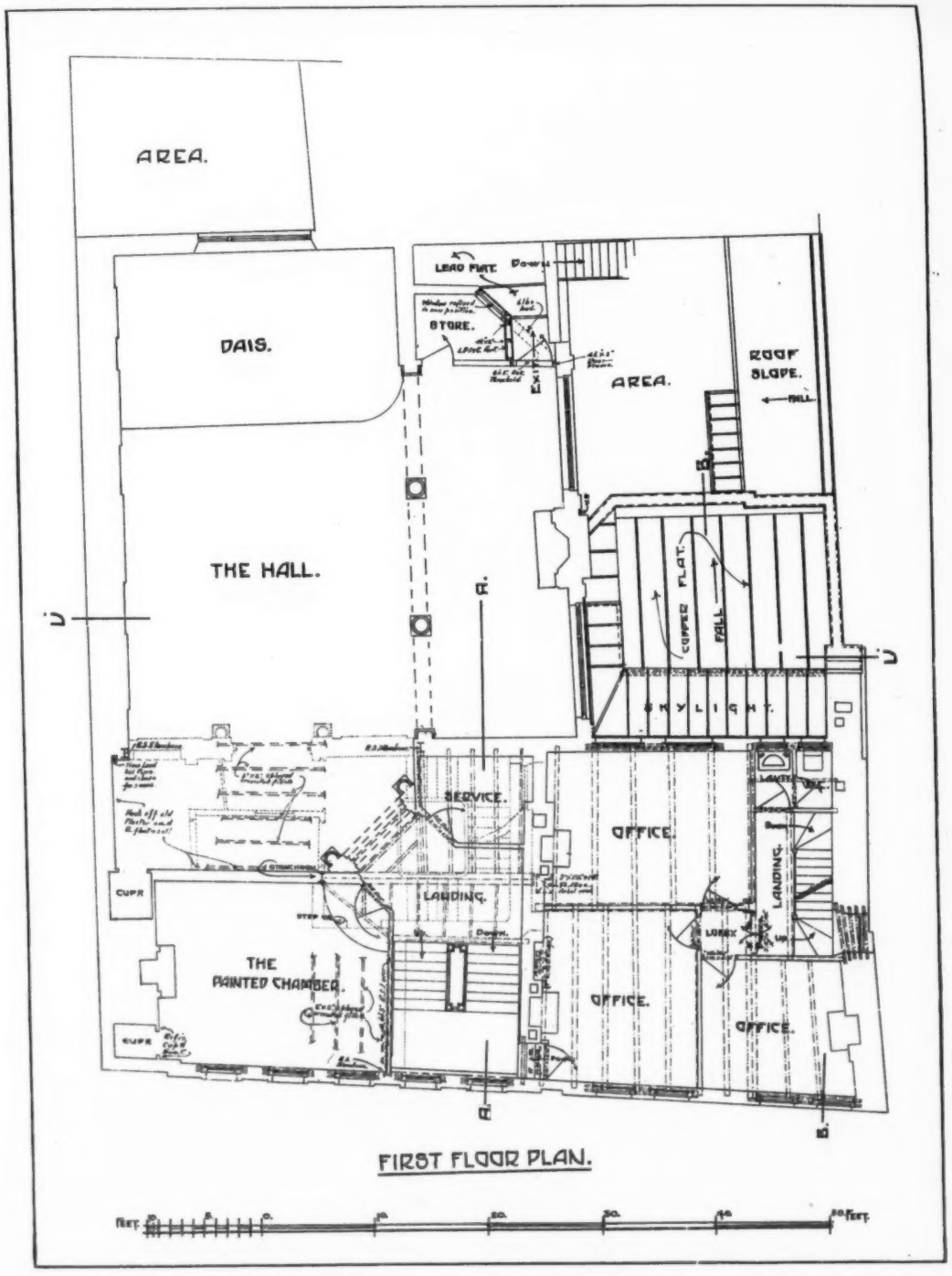

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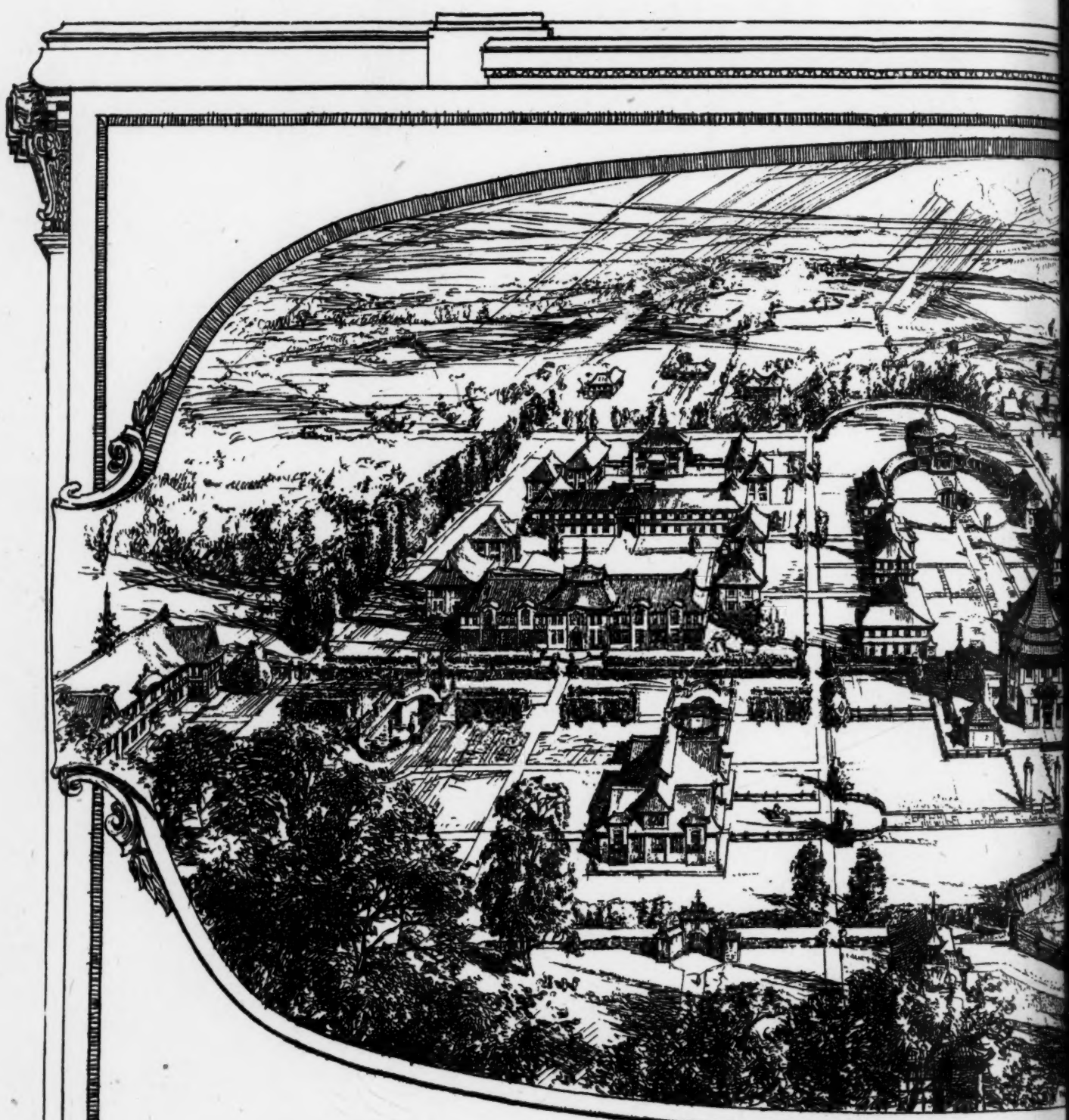

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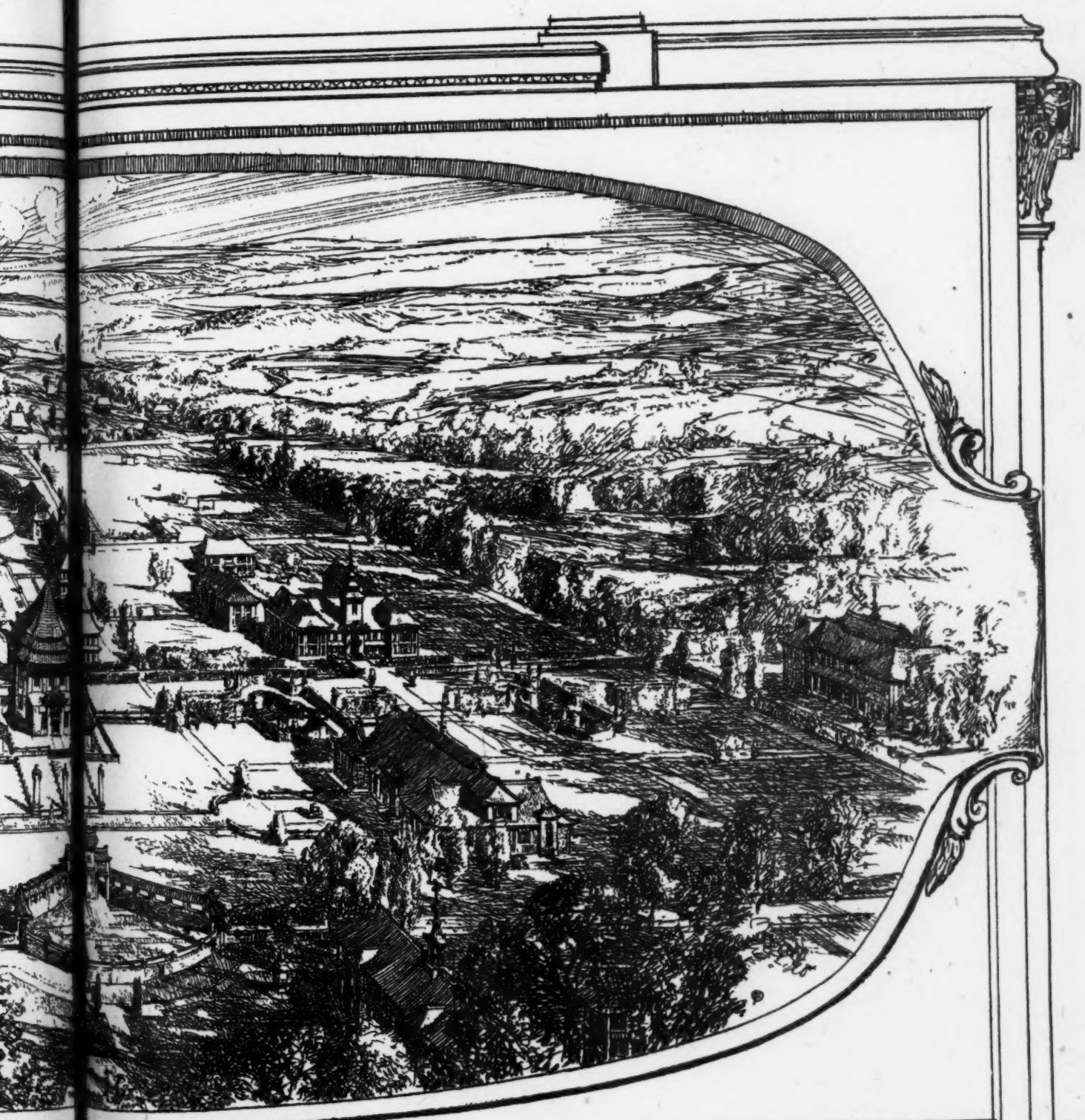

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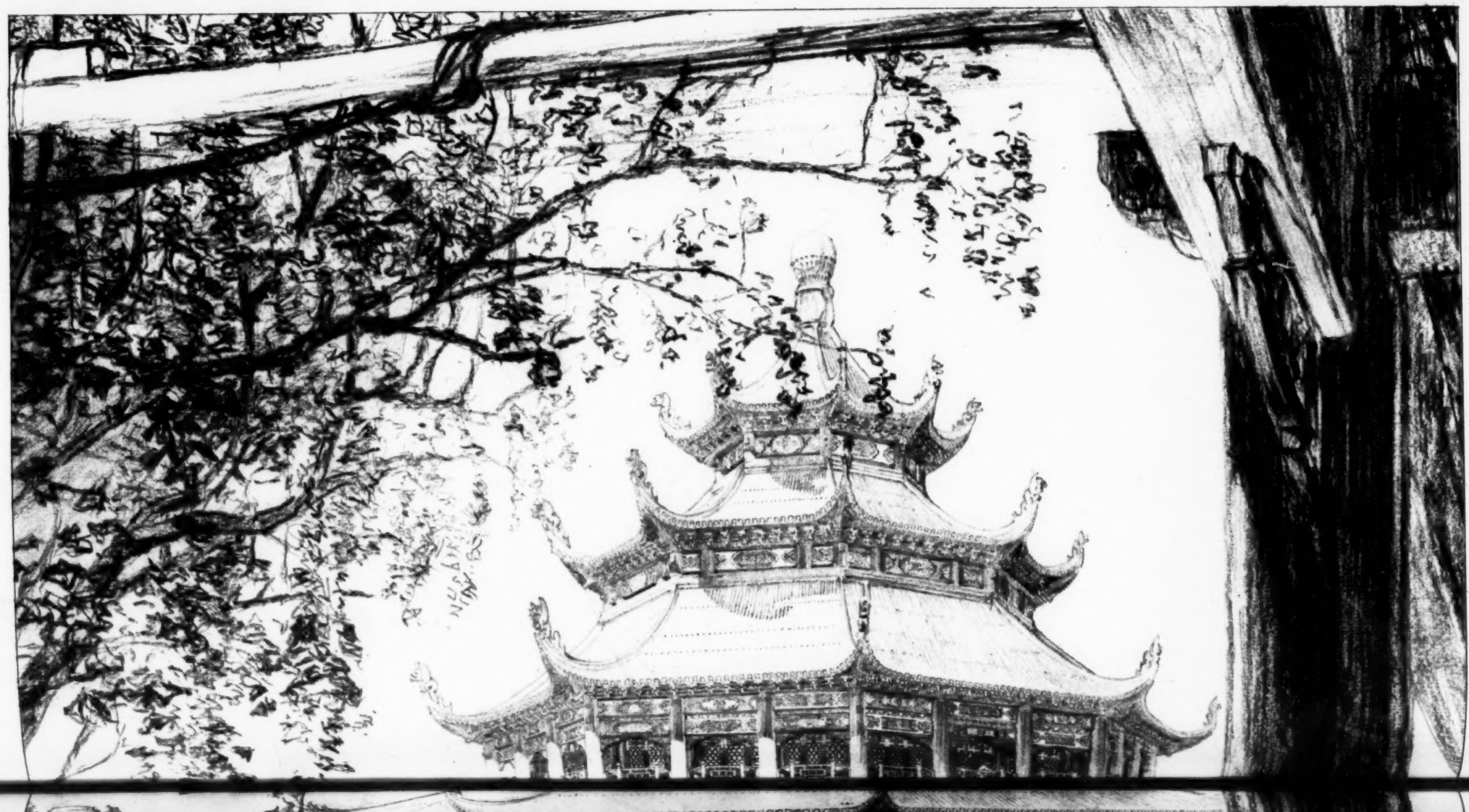

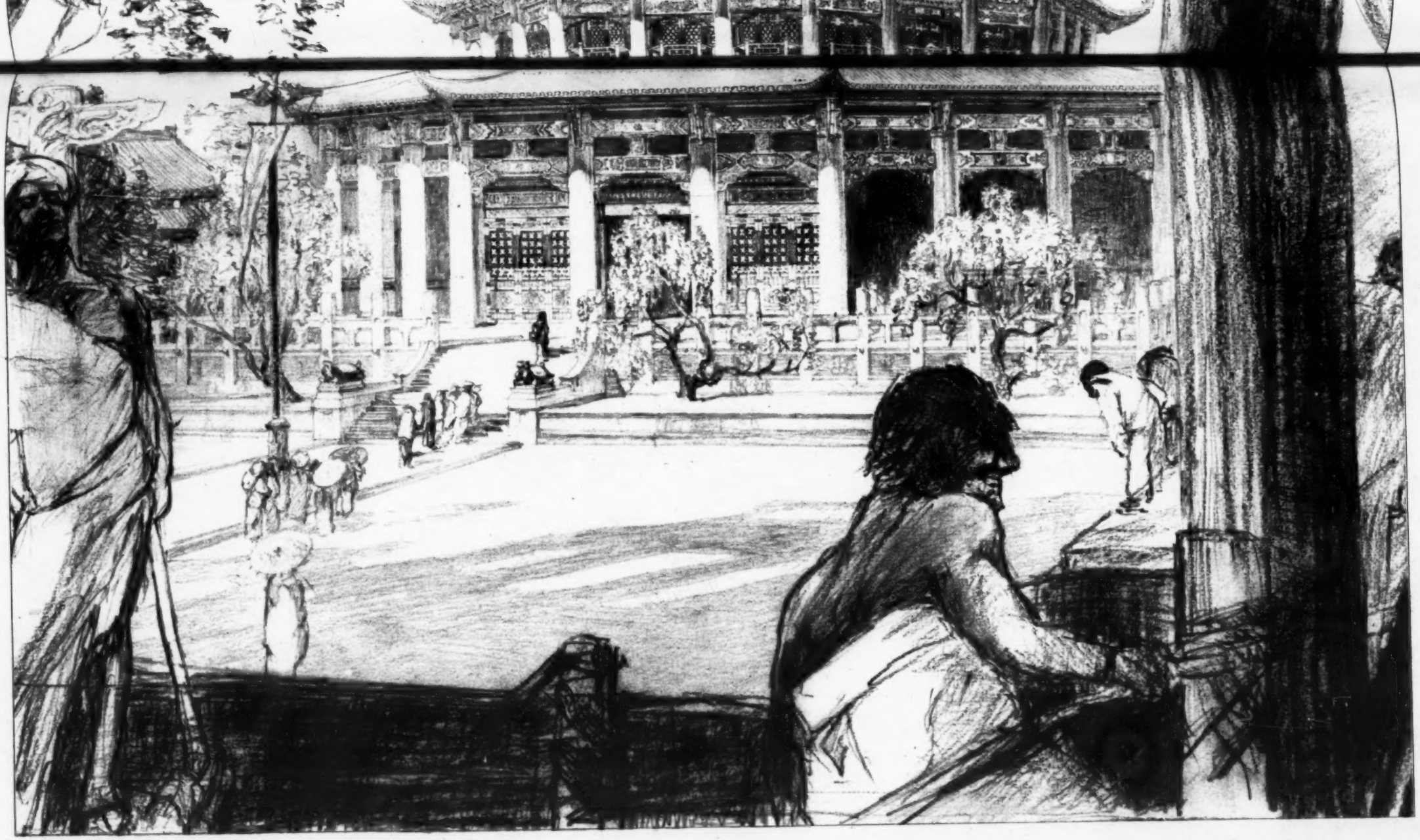

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